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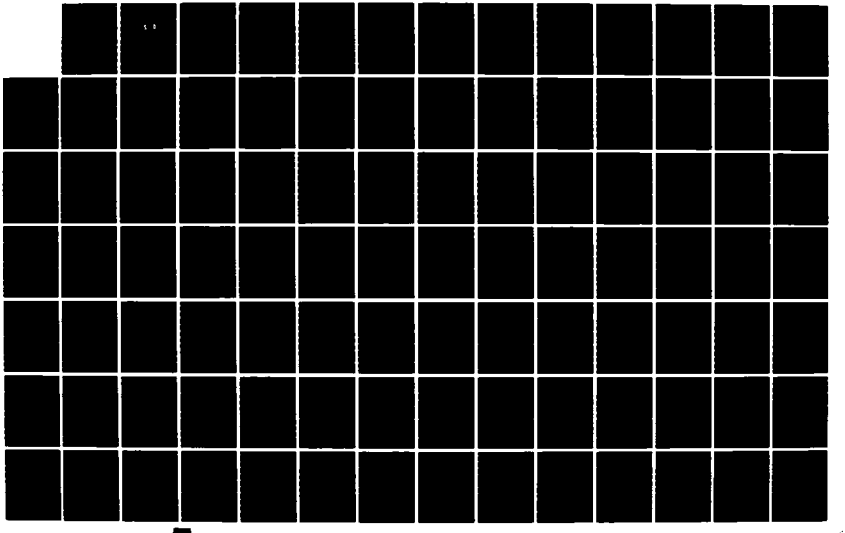

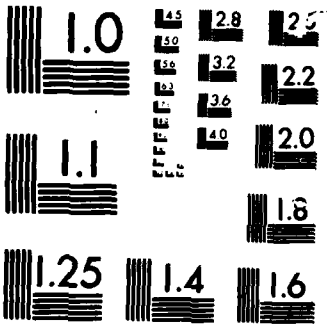
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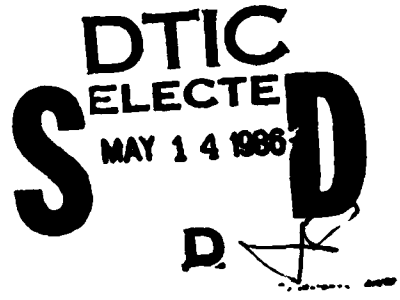

AN INVESTIGATION OF THE EFFECTS OF RANK, AFSC, AND DEPENDENTS ON THE LENGTH OF SEPARATION FOR AIR FORCE ENLISTED JOIN SPOUSE COUPLES

THESIS

Maureen R. Harrington
Captain, USAF

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The statistical analysis resulted in determining that the mean LOS for all enlisted join spouse couples who were reassigned over the last six years was 3.1 months. Of all couples that were included in the data base, 65 percent experienced a simultaneous move with zero LOS. Over 95 percent of all couples, including those with remote assignments, experienced a separation of less than 13 months. In addition, there was a statistically significant difference between the mean LOS for those who had dependents (mean = 2.2 months) and those who did not (mean = 4.5 months). There was also a difference in the mean LOS for each rank with the higher mean LOS for those in the ranks of E-2 and E-3.

It was also determined that the rate of assignment rejection was dependent on the length of the separation and the reenlistment status of the individual. In addition, those with a stated intention of remaining in the Air Force for at least 20 years were more likely to accept assignments involving a family separation than were those who had not decided to make the Air Force a career.

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AN INVESTIGATION OF THE EFFECTS OF RANK, AFSC, AND DEPENDENTS ON THE LENGTH OF SEPARATION FOR AIR FORCE ENLISTED JOIN SPOUSE COUPLES

THESIS

Presented to the Faculty of the School of Engineering

of the Air Force Institute of Technology

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In Partial Fulfillment of the

Requirements for the Degree of

Masters of Science in Operations Research

Maureen R. Harrington, B.A.

Captain, USAF

December 1985

Preface

This research has been an intensive learning experience. My hope is that this work will be helpful to the personnel community as a dynamic indicator of the success of the enlisted join spouse policy. This policy clearly supports the Air Force's quality of life emphasis in its personnel programs and I enjoyed documenting the past success of this program as well as investigating the future implications of this policy for enlisted couples.

I am deeply indebted to my husband, Col James Harrington for his constant encouragement and for his being both mother and father to our children during the preparation of this thesis. I am grateful to my children, Elizabeth, Kathryn, and Eric, for their understanding and patience during this time. I also owe a great deal to my faculty advisors, Col Michael J. O'Connell and to Lt Col Joseph W. Coleman, for their patience, encouragement, and suggestions which assured the completion of this research effort.

I would also like to give special thanks to Maj Alan Thomas (AFMPC), Ms Doris Black (AFHRL), Mr Charles Hamilton (AFMPC), and Capt Gregory Gordan (AFMPC) for their assistance in gathering the necessary data to perform this study. Without their help and kind assistance this research could not have been accomplished.

Finally, I am deeply indebted to Col Joann C. Neish (HQ USAF) for suggesting the general topic of an enlisted join spouse study and for her invaluable assistance in locating the people who were able to provide the information necessary for completion of this research effort.

Maureen Ragsdale Harrington

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Abstract

The purpose of this study was to perform a statistical analysis of the effects of rank, AFSC and dependents on the lengths of separation (LOS) experienced by Air Force enlisted couples when one or both of them are reassigned. Data on enlisted couples was gathered from the permanent universal airmen records, maintained by the Air Force Human Resourses Laboratory, Brooks AFB, Texas. This data contained assignment, dependent, and AFSC information on enlisted members married to another enlisted member during the years 1980 through 1985. Additional information from the Rapid Access Personnel Survey (RAPS) on join spouse matters was obtained from the Air Force Military Personnel Center, Randolph AFB, Texas.

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It was also determined that the rate of assignment rejection was dependent on the length of the separation and the reenlistment status of the individual. In addition, those with a stated intention of remaining in the Air Force for at least 20 years were more likely to accept assignments involving a family separation than were those who had not decided to make the Air Force a career.

I. Introduction

The United States Air Force has a personnel assignment policy that includes a provision for military members married to each other, known as 'join spouse'. Primarily, this policy attempts to assign military members close enough to their military spouse so that they can maintain a common household (Department of the Air Force, 1985:10-1). This policy has worked very well thus far. In fact, because of the Air Force's commitment to the join spouse policy, the rate of togetherness for Air Force couples has consistently been above 90 percent (Thomas, 1985a).

In spite of this sustained success rate, personnel planners at Headquarters USAF are very concerned that as the number of Air Force couples increase, and as these couples continue to progress in rank, it will become more difficult for the personnel system to accomodate join spouse assignments (Neish, 1985). This could affect retention, but as yet, the Air Force personnel community can not quantify this effect. This inability to forecast the retention effects of the join spouse success rate in the future could have an adverse affect on Air Force manning.

Background

Air Force regulations governing officer assignments (AFR 36-20) and enlisted assignments (AFR 39-11) state that when one service member is selected for an assignment, the select-

ing authority will consider the possibility of an assignment of the spouse to the same location. This consideration is based on Air Force needs, member's stated desires, and good career development for both individuals. There are several criteria that must be met for join spouse assignment consideration, the most important being Air Force military requirements. Valid manning requirements (i.e. vacancies) must exist for both individuals at the potential assignment location. (Department of the Air Force, 1985;10-1)

Because it is often more difficult to find assignments that meet the criteria for join spouse than it is for assigning two separate individuals, this policy has complicated the job of the Air Force personnel managers. However, the Air Force is committed to continuation of the join spouse policy since it supports the Air Force's quality of life emphasis. In fact, consideration for military couples has been a part of the personnel assignment policy since the Air Force became a separate service in 1948 (Thomas, 1985a).

During the last six years, Air Force personnel analysts have been closely monitoring the join spouse togetherness rate. During this period, the togetherness rate has consistently exceeded 90 percent (Thomas, 1985a). The togetherness success rate for join spouse couples is the percentage of join spouse couples assigned to the same geographic location as their spouse. For the purposes of this definition, a couple is together if the individuals are

assigned to locations within 70 miles of each other. The 70 mile criteria ensures that the reassignment opportunities are not limited to the base to which one of the spouses has been selected. This affords members increased join spouse assignment opportunities in areas like Washington D.C., West Germany, and San Antonio, Texas (Neish, 1985).

In spite of this sustained success rate, personnel planners at Headquarters USAF are very concerned that as the number of Air Force couples increases and as these couples continue to progress in rank, it will become more difficult for the personnel system to accomodate join spouse assignments (Neish, 1985).

Recently, a force composition study was undertaken by the Air Force Military Personnel Center (AFMPC) at the direction of Major General Robert Oaks, Assistant DCS/Manpower and Personnel. This study evaluated the

> ...probable impact of legislation passed last year [1984] to force the service to increase the percentages of females among its recruits--from the current 14.7 percent of all enlistees to 22 percent by 1988 (Ginovsky, 1985:1).

The report of the initial results of the study is awaiting the Secretary of the Air Force's signature and is expected to be published late in 1985. One major question left unanswered by this study is "what will be the personnel impact of the increased inability to accomodate join spouse assignments?" (Neish, 1985)

The Air Force seeks to predict how the rate of success

for join spouse assignments will change in the future and what specific impact this may have on retention. Since a significant increase in the rate of separations could have an adverse effect on retention force planning, the answer to this question is vital.

The retention question is important both for officers and enlisted personnel. But since the number of marriages between enlisted members comprises over 83 percent of all Air Force couples, the possible impact on enlisted members' retention is far greater. There are 20,477 couples currently in the Air Force, of which 17,091 represent marriages between two enlisted members (AFMPC, 1985:1-3).

The process of assigning enlisted members is much more automated than it is for officers. Specifically, a program manager in the officer assignment process works assignments, usually after some input from the individual about assignment preferences. This adds a greater degree of flexibility not usually available for enlisted members. For these and other reasons, the Air Force is currently more concerned about the retention impact of diminished join spouse assignments opportunities for enlisted members (Thomas, 1985a).

The current 20,477 Air Force couples is a substantial increase from the 8,400 couples in 1975 and almost no military couples as late as 1967 (Thomas, 1985b). There are several reasons for this dramatic increase. First, in 1948 the "Women's Armed Services Integration Act," Public Law (PL) 625, limited the number of enlisted women to two percent of

the authorized Regular Air Force (Thomas, 1985b:1-4). This limitation was lifted in 1967 with the passage of PL 90-130; as a result, women now comprise approximately 11 percent of the Air Force (Air Force Almanac, 1985:192). Second, before 1971, women with minor children were not allowed to remain on active duty. This policy forced many women from the ranks of the Air Force. The Air Force's official position was changed in 1971 in response to an impending Supreme court decision (Thomas, 1985b:1-4). When these two changes occurred the number of women in the Air Force began to increase, and so did the number of military marriages. This trend will most likely continue as the number of women increases to the limits of congressional decree -- possibly twenty-two percent of all enlistees (Ginovsky, 1985:1).

Objectives of Research

Even though the Air Force tries to keep married couples together, separations as a result of reassignment, do occur. Is the length of separation a function of the ranks of the individuals? Is the length of separation influenced in any way by the career fields of the couple or by whether they have dependents? This research effort will attempt to answer these questions.

The specific objectives of this research effort will be to apply statistical analysis to Air Force personnel data and Air Force personnel survey data to determine the following.

1) What, if any, relationship exists between the length

of family separation as a result of one member's assignment and the couple's ranks, career fields, and whether they have dependents ?

2) Is the retention decision of join spouse couples facing a separation from each other affected by the length of the separation?

3) What factors are most significant in predicting whether an Air force member married to another Air Force member will accept an assignment that involves family separation?

4) Do those who intend to stay in the Air Force accept assignments involving family separation at a rate different form those who have not decided to make the Air Force a career?

Scope

An overwhelming majority (83 percent) of Air Force join spouse marriages are between enlisted members (AFMPC report, 1985). Therefore, the data for this study is limited to information about Air Force enlisted members married to another Air Force enlisted member during the years 1980 through 1985. The year 1980 was selected as the first year for the study since before this time there was no way to tie together the personnel records of a husband and wife.

Methodology

The first step was to construct an enlisted join spouse data base from 1980 personnel data provided by the Air Force Human Resources Laboratory. This data base was then updated with each succeeding year's data tape. The length of separation was calculated from this data for each couple that moved between 1980 and 1985 either simultaneously or were separated

and reunited during the six year period. A regression analysis was then performed with the length of separation as the criterion variable and of ranks, Air Force specialty codes (AFSCs), and number of dependents as the predictor variables.

The second step was to construct a data base from the responses to the Rapid Access Personnel Survey (RAPS) on Join Spouse Matters. Statistical analysis of this this data base was used to determine if the retention decision of join spouse couples is affected by the length of separation. The alternative lengths of separation used in the survey questions were 12, 18, 24, 30, and 36 months. During the third step, discriminant analysis was performed on this data to determine which factors distinguished those who would accept each of the five different assignments from those who would not.

The fourth step again involves discriminant analysis of the RAPS data but this time the data is separated into two sets prior to analysis. These two groups represent those who intend to make the Air Force a career and those who do not.

Overview

Chapter II reviews current literature on topics associated with dual career couples, retention of enlisted members, and women in the military. A detailed description of the enlisted join spouse personnel data base, is found in chapter III. In addition, this chapter contains information on the Rapid Access Personnel Survey data base. The complete

explanation of the methodology employed in this research effort is contained in Chapter IV. Chapter V summarizes the results and Chapter VI contains the analysis performed on the statistical results. Finally, chapter VII reports the recommendations and conclusions.

II. LITERATURE REVIEW

Introduction

The all-volunteer military as well as the current fiscal restraints on military spending have strained the military force planning process. "The retention of qualified personnel within the military is an issue of national concern. It has been the subject of Congressional hearings and public debate" (Seboda and Szoc, 1984:1). As a direct result of these two factors, there have been many studies done and much written recently on retention of qualified military personnel. Of these hundreds of documents, several touch on join spouse couples, or dual-career couples as they are known in the civilian sector. For the most part, the studies referenced in this chapter do not deal directly with the join spouse questions, but they do shed light on the phenomena in the military as well as the civilian sector.

There has been very little direct research done on join spouse couples by any of the services. Up until recently, the percentage of military members who were married to other members was not significant enough to warrant studying. But as the number of women in the military increase so will the number of join spouse marriages. In the future, retention studies will probably specifically address the issue of retaining join spouse career military enlisted couples.

Dual-Career Couples

Francine S. Hall and Douglas C. Hall have studied extensively the emerging phenomena of dual-career couples. Their research is not centered on military join spouse couples, but many of their findings apply to couples from all walks of life where both the husband and wife are employed (or attend school) full time. They see the dual-career couple as an increasing phenomena which has not yet reached its peak in our society. They refer to the dual-career couple as a "corporate time bomb" because the impact which is being felt now, while most of the couples are at entry level or at early career stages, is minimal compared to what it will be in about five years when these couples will be in more critical positions (Hall and Hall, 1984:881).

The Halls differentiate between the characteristics of those in the early-career stage and those in the mid-career stage. This distinction is important for understanding the Air Force join spouse explosion. Most of the Air Force join spouse couples are in the early-career stage (73.4 percent of all enlisted join spouse marriages are between individuals with the rank of E-5 or below) (AFMPC report, 1985:1-3). But this will undoubtably change in the next five years as these couples continue to progress in rank. Summarizing the characteristics that the Halls have identified during their research on dual-career couples; those in early-career stages generally have a high degree of commitment to both careers and are more willing to make compromises at home and explore alternative living arrangements if this is required for

mutual career advancements. For each individual, the job has a very high priority. On the other hand, mid-career couples tend to be less willing to accept family separation and relocation as requirements for advancement. They are more willing to look for alternative careers rather than accept a move that would separate the family. "The individual is no longer committed to his or her career alone. The commitment is now to the family." (Hall and Hall, 1984:869)

The Air Force has done very well in the past five years in retaining join spouse individuals that are second-termers and career airmen. In fact, there is very little difference between the retention rates for second-term or career enlisted members who are married to another enlisted member and the entire enlisted force (Appendix F). This would seem to indicate that the Air Force is doing a good job at keeping families together, especially those at mid or late career points. This research effort will attempt to quantify the average length of separation by grade, to determine if there is any difference.

Women in the Military

A historical perspective of the role of women in military written by Mady and David Segal indicates that the "policies regarding the utilization of women in the American Armed Forces have resulted primarily from technological, demographic, and gender role changes (Segal and Segal, 1983:1). This paper highlights the numerous changes that

have occurred in the military's use of women. It does point out that the utilization of women in the military has diverged from historical precedent and that the increased use of women is contingent upon society's continued expansion of it's concept of appropriate roles for women.

In a study of retention of Army women (Plog et al., 1974), a survey was administered to Women's Army Corps officers and enlisted personnel. One area of investigation was the relative importance of various improvements in Army life. The respondents overwhelmingly selected the chance for a husband and a wife to be assigned together and the opportunity to remain in the service after marriage as the two most important improvements.

Retention and Family Factors

Several studies have been conducted relating family issues to retention in the military. Several excellent research efforts indicate that family factors are significantly related to the retention decision. In one Air Force study Orthner (1980) found that the single most important factor relevant to the retention decision was spouse support for an Air Force career. In another study (Dansby and Hightower, 1984), the intention to stay in the Air Force correlated positively with spousal desire for the member to stay in, length of marriage, and number of children at home. Neither of these studies isolated members whose

spouse was also in the Air Force.

The Navy recently completed a five year study (1979 - 1984) to determine which family factors were critical in the retention decision made by Naval personnel. Several reports, were published as a result of this study (Szoc and Seboda, 1984; Seboda and Szoc, 1984). The study investigated which factors significantly influenced the decision to leave or stay.

> For those who stayed, job related factors were considered to be an incentive for staying, as was spouse's attitude towards the Navy...For those who left,family separation factors and spouse's attitude tended to be rated as important factors for leaving...Only one factor appears in common as important for both staying and leaving: spouse's attitude. (Seboda and Szoc, 1984:20)

Another conclusion of this study was that as the proportion of time spent away from the family increased, the proportion of enlisted members who left the Navy increased.

Retention Decision vs Retention Intent

There are several excellent studies which show that retention intent is a good predictor of retention behavior. An Air Force study (Alley and Gould, 1975) tested the hypothesis of using survey data to predict attrition. They concluded that the

> Accuracy of the career intent statement in predicting career decision was a function of the time interval between survey administration and time of decision... The results of these analyses support the basic statistical feasibility of using career intent statements obtained during the first-term (particularly

> years 3 and 4) as advanced indicators of career decisions at the individual or group level (Alley and Gould, 1975:24).

Seboda and Szoc also studied whether retention behavior could be predicted accurately from retention intent and concluded that the intention to reenlist was an excellent predictor of reenlistment behavior (Seboda and Szoc, 1984, Szoc and Seboda, 1984).

Another Navy study (O'Neill and Mirra, 1979) substantiates the hypothesis that intention to stay is a valid substitute for actual retention decision even for those beyond their first enlistment. They concluded that "stated intent was, indeed, a valid proxy for actual reenlistment behavior" (O,Neill and Mirra, 1979; 56). This study focused on E-5s and E-6s in a specific career field (Cryptologic Technician). The factors found to be most significant in predicting retention behavior (using the proxy of retention intent) were job satisfaction, impact of military life on family, impact of military life on social status, and satisfaction with fringe benefits.

III. Data Sources and Preparation

Introduction

A major portion of this thesis effort was spent preparing the data for analysis. This was especially true of the join spouse historical personnel data. This data set required extensive manipulation in order to develop the main variable of interest, length of separation. The second data set from the Rapid Access Personnel Survey (RAPS) on Join Spouse Matters required considerably less work to prepare for statistical analysis. This chapter describes the main data sources, and then explains the processes of data manipulation required during this thesis effort.

Data Sources

Data used in this thesis was gathered from the data files of the Air Force Military Personnel Center (AFMPC) and from the Universal Airman Records (UAR) maintained at the Air Force Human Resources Laboratory (AFHRL), San Antonio, Texas. The primary data source generated by AFHRL for this study was a magnetic tape which contained information on each Air Force enlisted person who had a marriage code indicating that they were married to another active duty Air Force enlisted member. The data tape contained six files which were generated from the December tapes from the years 1980 through

1984, and the June tape from 1985. The first year selected was 1980 since there was no way to tie together the records of a husband and wife before this time.

The second data source used in this research effort is the responses to the "Rapid Access Personnel Survey (RAPS) on Join Spouse Matters". This 38 question survey was conducted by AFMPC in January 1985 as part of the force composition study for the Secretary of the Air Force (9). The magnetic tape generated by AFMPC contained demographic data as well as the responses to questions about retention decisions. It was administered to 1739 Air Force people including 1033 enlisted members who were married to another Air Force member at the time of the survey. Specific survey questions of particular interest to this study were those which dealt with the perceptions of acceptable separation lengths and reactions to hypothetical assignments resulting in separation from spouse (Hamilton: 1-18). The RAPS questions are found in Appendix D.

The third type of information from AFMPC was historical, statistical data on the number of women, the number of join spouse couples, the rank distribution of these couples, and retention statistics.

Join Spouse Data Base

The Air Force maintains extensive UAR personnel records on all active duty Air Force members. There are over 500 data items in the UAR which can be used to describe all aspects of the entire career of an individual Air Force

member. The personnel records of the current period are maintained at AFMPC and are updated on a daily basis with information from the Consolidated Base Personnel Offices (CBPOs) throughout the world. At the end of each fiscal quarter, a permanent copy of the entire UAR data base is made from the AFMPC files and sent to AFHRL. AFHRL maintains a permanent library of these quarterly data tapes.

The data file for this research is a subset of the UAR file. The records selected for inclusion are those of enlisted members whose marital status indicated that they were married to another active duty Air Force enlisted member. This subset of the UAR data base was named the join spouse data base.

Spouses in the UAR are matched by means of the SSANs, but according to the the staff at HRL who maintain the historical data base, the field containing the spouse's SSAN was only added to the UAR file in 1980. As is true with most new data items, spouse's SSAN was not initially a well maintained data item (Black, 1985). As a result, many records were not able to be matched with a spouse's record because the spouse's Social Security number was missing or unusable. Those records without usable information in the spouse's SSAN field were not included in the join spouse data base used in this research effort. Table 3.1 lists the number of records which met the selection criteria for each year of the study as well as the number of individual records

rejected. It also lists the percentages of all available records that were included in the study.

Computer Resources

The two AFIT VAX 11-780s were used for data manipulation and analysis. The data was initially processed by means of several FORTRAN programs on AFIT's VMS VAX. These FORTRAN programs are explained below and are listed in Appendix A. The Biomedical Data Processing (BMDP) statistical software package was used to perform the statistical analysis on AFIT's UNIX VAX.

Table 3.1

Number of UAR Records Included in Study

Year	Number of Individual Records Selected	Number of Individual Records Rejected	Percentage of join spouse Records used
1980	22,372	4,007	84.81
1981	26,180	7,069	78.74
1982	30,852	5,965	84.00
1983	32,314	5,084	86.41
1984	32,329	3,853	89.35
1985	32,903	3,020	91.59

(HRL report,1985)

Variables Included

A main hypothesis for this study is that Air Force enlisted couple's ranks, whether or not they have dependents,

and how large their career fields are in relation to the entire enlisted force have a statistically significant effect on the length of separation (LOS) when one of them is reassigned. This hypothesis is tested by regression analysis in the first step of the analysis process. Therefore, the variables included for both members in the data base created from the UAR enlisted join spouse records are rank, AFSC, and dependent's status. In addition, variables describing duty locations are included so that length of separation (LOS) can be calculated.

Table 3.2 lists the variables from the UAR which form a single record of the join spouse data base. The pseudo codes indicated in Table 3.2 are a systematically scrambled version of Social Security account numbers (SSAN). AFHRL generated the pseudo codes in preparing the data tape and only AFHRL knows the methodology that was used to generate these pseudo codes. The privacy act precluded release of SSANs so the pseudo codes were used to match the records of spouses and to track couples over the five year period. Member's and spouse's pseudo codes are only used in the initial data manipulation to merge the records of husbands and wives.

The join spouse intention codes indicated in field 5, represents the individual's desires on future join spouse

Table 3.2

JOIN SPOUSE DATA BASE
Subset of Universal Airman Record for Join Spouse
Enlisted Personnel

FIELD	TITLE	LENGTH	RANGE OR TYPE
1	member's pseudo code	9	numeric
2	spouse's pseudo code	9	numeric
3	rank	1	1-9
4	AFSC (1st two digits)	2	10-99
5	join spouse assignment intention	1	A,B,H
6	number of dependents in household	2	0-99
7	sex	1	M,F
8	year arrived duty location	2	YY
9	month arrived duty location	2	MM
10	day arrived duty location	2	DD
11	duty location	4	ALPHA
12	update indicator	1	ALPHA

assignments. They are selected by individuals and are conveyed to the Air Force personnel system via AF Form 1048. A copy of this form is found in Appendix B. An 'A' join spouse intention code (CONUS or any overseas tour) indicates that the individual wants to be assigned anywhere in the world with their spouse. A 'B' code indicates that the member wishes to be assigned with their spouse only if the spouse is assigned to the CONUS or to a long tour overseas. The 'H' code indicates that the individual does not request join spouse assignment consideration. Codes 'C' through 'G' on the Form 1048 are no longer used (AF Form 1048, 1979).

Data Base Formats

The UAR has a record of all past and current assignments

for each active duty person. Given this fact, determining lengths of separation for husbands and wives might appear to be a straightforward process of simply comparing records. However, 'date of marriage' is not one of the 500 fields in the UAR. Thus, using only information from the UAR, one cannot determine when a couple actually gets married except by looking for changes for one year to the next. The Air Force has recognized this deficiency and as of 1986 will begin keeping date of marriage as a data item in the UAR (Gordon, 1985).

Before any analysis could be performed on the join spouse data base it had to be transformed into a form which would facilitate statistical analysis. The first join spouse data file was created from the UAR master tape for December 1980. The information contained in the 1980 join spouse data file was used to create a baseline which was updated with each succeeding year's data file. As a result of this, the 1980 join spouse data file was treated slightly differently from the other years. The explanation for the data manipulation process for 1980 will be followed by an explanation of how the succeeding years were handled.

Five FORTRAN programs were used to transform the 1980 join spouse data into a baseline working data file (WDR). The flow chart (Figure 3.1) shows the flow of data through these programs.

The first program, called STATS, (Figure 3.1, box 1) generated basic demographic statistics including the number

of men and women, the number of each sex with dependents, the number in each rank category, and the number of men and women in each career field. The primary reason for running this program was to determine the composition of those who were excluded from further consideration because they did not request join spouse assignment consideration. The results of this STATS program was compared against the results of the STATS2 program (Figure 3.1, box 3) to determine if a specific portion of the population was more likely to reject the availability of join spouse consideration.

The second FORTRAN program, called DELH, (Figure 3.1, box 2) eliminated those couples who had selected code 'H' on their Form 1048, indicating that they did not want join spouse assignment consideration. These individuals were deleted from the join spouse data base since their preference for separate assignments might bias the results of length of separation upward. Actually, by their own choice, they are not participating in the join spouse program and, therefore, should not be included in the join spouse study. Table 3.3 summarized the results of the DELH program.

The third program STATS2 (Figure 3.1, 3), was virtually identical to STATS. It provided the same demographic data on the reduced data set since this more accurately defined the join spouse population set of interest. The results of the STATS2 can be found in chapter V with the other descriptive statistics.

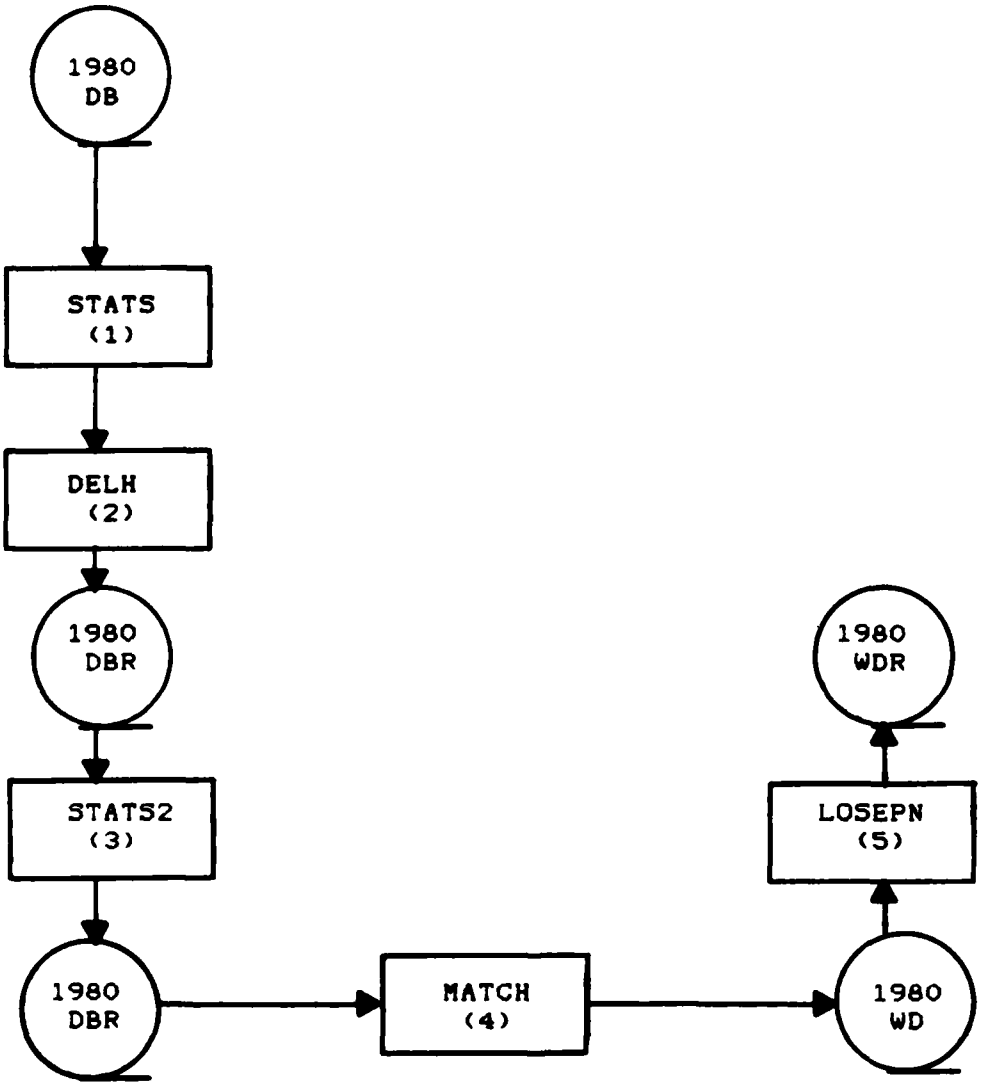

Figure 3.1

Data Processing Flow Chart for 1980 Join Spouse Data

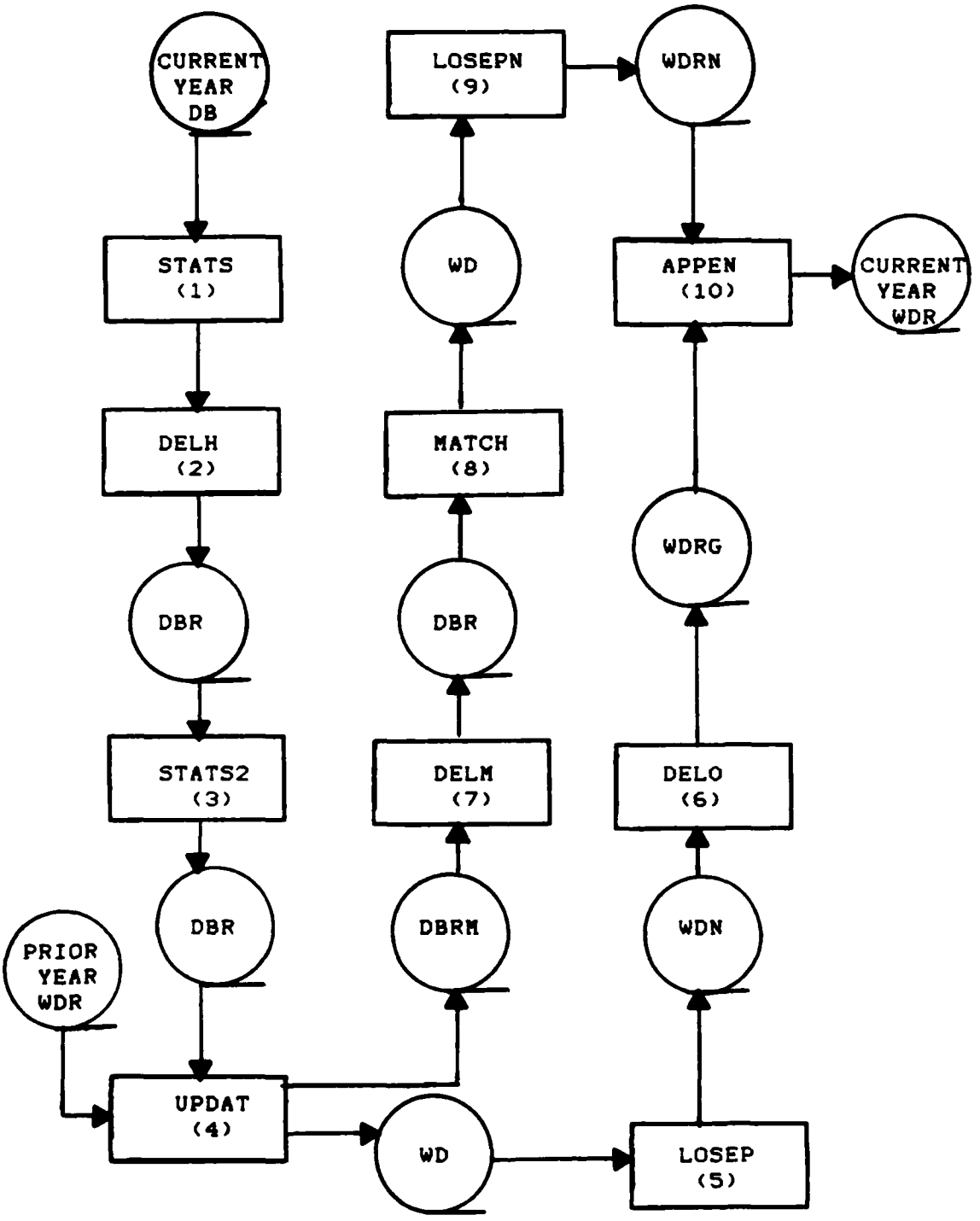

Figure 3.2

Data Processing Flow Chart for 1981-1985 Join Spouse Data

Table 3.3

Percentage of Individuals Requesting Join Spouse Consideration

year	# who want join spouse	# who do not want join spouse	percent who want join spouse
1980	21,799	573	97.37
1981	26,180	639	97.56
1982	30,852	680	97.80
1983	32,414	744	97.70
1984	32,329	838	97.41
1985	32,903	1086	96.70

The fourth program, MATCH, matches the records of husbands and wives and builds a working data base that is composed of pairs of matched records. A listing of program MATCH is found in Appendix A. Each odd numbered record is a man's followed by his wife's record. The format for the working data file is found in Table 3.4.

Table 3.4

WORKING DATA FORMAT

field	title	length	range or type
1	member's pseudo code	9	numeric
2	AFSC (1st two digits)	2	10-99
3	rank	1	1-9
4	duty location	4	ALPHA
5	year arrived duty location	2	YY
6	month arrived duty location	2	MM
7	status of dependents	1	0-1
8	length of separation	2	months
9	togetherness flag	1	0-1-2
10	move indicator	1	0-1
11	update indicator	1	0-5,8-9
12	spouse's pseudo code	9	numeric

The working data file had a few extra fields, not in the UAR data base, that were created by the program MATCH. These four fields were all zero filled in the baseline 1980 file. The first extra field, 8, stored the length of separation a couple experienced during a single period of separation across the five year period. The next field created by MATCH was a togetherness flag (field 9). This togetherness indicator had a value of '0' if the couple was assigned together, '1' if the couple was separated, and '2' if the couple had completed a separation. Field 10 was created to indicate if the individuals had moved from the location they were assigned in the previous year. A value of '0' in field 10 indicated that the individual had not moved, while a '1' indicated that they were at a location different from where they were the previous year. The update indicator (field 11) had a '0' for the first year a record was in the data base, this value was changed to a '1' if it was updated in 1981, a '2' if updated in 1982, etc. through 1985. The values '8' and '9' in the update field were used to indicate that the record should be eliminated from the data base. A '9' indicates that only one of the spouse's record was in the data file. This occurred primarily when one spouse selected a code of 'H' on the AF Form 1048 and the other did not. The individual indicating they did not want join spouse assignment consideration was eliminated in program DELH, but if the spouse selected an 'A' or 'B' on there Form 1048, they

were not eliminated until this point. An '8' indicated that the individual whose record was being updated had a different spouse than in the previous year. In other words, the individual divorced one enlisted member and remarried another during the calendar year just completed.

The next program LOSEPN, determined if any of the couples became separated due to a reassingment of one or both of them in 1980. If so, the length of separation was calculated and inserted in field 8. In addition, the fields indicating togetherness and move (9 and 10) were changed from 0 to 1. LOSEPN outputs the 1980 working data file which serves as an input to the 1981 update process.

The processing for each year's data file after 1980 was accomplished as in Figure 3.2. There are several programs which this update process has in common with the baseline formulation process. The first three programs STATS, DELH, and STAS2, were run on each succeeding years data file. The resulting output from these programs are summarized in Chapter V.

The next program, UPDAT (Figure 3.2, box 4) was used to update the information in the working data base. After each year's join spouse data base file had been edited by the STATS, DELH, and STATS2 programs, the edited file was used to update the previous year's working data file. If the individual was not separated from their spouse due to a reassignment the following information was updated:

Field	Title
4	location code
5	year assigned to present location
6	month assigned to present location
2	current AFSC
3	current rank
7	status of dependents

If the individual was separated from their spouse, only the first three items (fields 4,5,6) were updated. The reason that the rank, AFSC, and dependents status were not updated is that these variables kept the values they had when the couple first became separated from each other. This information was used in the regression analysis for length of separation.

In addition to updating the fields indicated, Program UPDAT (Figure 3.2, box 4) also changed the information in field 10, indicating whether the individual had moved since the previous year. It also marked the records in the join spouse data base that matched records in the working data base. Program UPDAT produced two modified files, an updated version of the previous year's Working Data file and a marked version of the current year's Data Base file.

The updated Working Data file was then run through program LOSEP (Figure 3.2, box 5). This program determined if the couple was separated, calculated the length of separation and updated the fields which gave the status of togetherness (fields 9,10,11). The most difficult aspect of this program was determining when couples, who were not assigned to the same location, were actually assigned to

within 70 miles of each other. These couples were considered to be co-located since they were assigned close enough to their spouse to maintain a common household.

The output from the LOSEP file contained the previous year's working data file, updated by the current year's join spouse data base with current information on the status of togetherness. In this output, called WDN, there were some records which were not updated because the couple was not included in the current year's join spouse data base. This occurred when the couple divorced, one of the members separated from the Air Force, or one of the members changed their join spouse assignment intention code during the current year. The records representing these cases were deleted from future consideration only if they had not completed a separation or a simultaneous move. Once a couple had completed a separation or simultaneous move, the records were included in the final data base regardless of what occurred in future years. The program which accomplished this elimination of unusable records was DELO (figure 3.2, box 6).

The output from this program, which was called WDRG, formed part of the final output for the annual update process. The rest of the final output came from those records in the annual join spouse data base file (DB) which were not used to update the working data file (WD). These records were identified in the UPDAT program and they represent couples who got married during the current year.

The records in DB that were used to update the working data base were deleted from DB by the program DELM.

Program DELM (Figure 3.2, box 7) can be found in Appendix A. After each of the join spouse data base files (for years 1981 through 1985) was used to update the working data base, the remaining unused records in the join spouse data base were checked for any new couples that could be added to the working data file. These remaining records of the join spouse data base file were run through the MATCH program (Figure 3.2, box 8). The new couples identified by the MATCH program were then processed through LOSEPN in order to determine if any of these new couples became separated during their first married year. The programs MATCH and LOSEPN function in the updating process just as they did in the baseline process for the 1980 data file.

The output from LOSEPN, WDRN, along with the output from DELO are input into the final updating program APPEN (Figure 3.2, box 10). This program outputs the current year updated working data file WDR, which serves as the carry forward for the next updating cycle.

After the matched records from the 1985 join spouse file were added to the working data base, all the information necessary to compute the length of separation (LOS) was available in the data base.

The final updated Working Data file underwent one final transformation before the regression could be performed. Since it was not feasible to use the AFSCs directly in a

regression equation, the AFSCs were replaced by the percentage of the number of airman in that career field to all airman. For example, in 1984 there were 29,173 airmen in the career field 70 (Administration). There were a total of 494,289 airmen in the Air Force that year. Therefore, the 70 career field accounted for 5.902 percent of the entire force. This transformation was used since the larger the career field the greater the assignment possibilities and conversely, the smaller the career field the more limited the assignment possibilities.

The FORTRAN program run on the working data base to translate the AFSCs to percentage of the entire force was the PERCENT program. The listing for this program is found in Appendix A. This program generated a revised data base that was used as the data base for the regression using the BMDP statistical software program. The records for the LOS data base are a compilation of the the critical information from both the husband's and the wife's records. The format for this data base, which is called the LOS data base, is found in Table 3.5. The percentage used for each AFSC are also listed in Appendix A, immediately after the PERCENT program.

Descriptive Statistics

The outputs from the STATS2 program are in Appendix C. The results for these outputs are summarized in Chapter V. The number of women and men in each rank, for each year is also summarized graphically in chapter V. Descriptive

statistics from the final LOS data base include the total frequency, the mean, standard deviation, standard error of mean, and range of values. These are all presented in tabular form in The results chapter.

Table 3.5

LOS DATA FORMAT

field	title	length	range or type
1	length of separation	2	months
2	rank (male's)	1	1-9
3	rank (female's)	1	1-9
4	AFSC percent code (male's)	6	F6.4
5	AFSC percent code (female's)	6	F6.4
6	dependents code	1	0-1
7	AFSC (male's)	2	10-99
8	AFSC (female's)	2	10-99

RAPS Data Description

Survey Description

In January of 1985, a survey was initiated by USAF/MP and carried out by AFMPC/MPCY "to investigate join spouse issues in support of special study group on women in the Air Force (USAF/MPZ)" (Pellum, 1985). The survey was administered at Consolidated Base Personnel Offices (CBPOs) throughout the world. The survey instrument was sent electronically on 18 January with a deadline for completion 28 January. The survey consisted of biographical questions, questions on current assignment, historical information on family separations, acceptable separation limits, and reaction to

hypothetical assignments resulting in separation from spouse (Pellum: 1985). A copy of the RAPS survey for join spouse matters is in Appendix D.

Composition of Respondents

The sample for the survey was 2055 randomly selected Air Force members whose records indicated they were married to other active duty Air Force members. There were 1739 surveys returned which represents an 85 percent response rate. Selection of participants were made so that there were an equal number of males and females as well as a proportion of officers and enlisted which reflected the proportion of each in the entire join spouse population (Pellum, 1985:1). Of the 1042 enlisted members who returned the survey, 1033 were currently married to another enlisted person. Table 3.6 indicates the percentages of enlisted military couples, by rank of each spouse, in the Air Force as of 30 March, 1985.

It is followed by Table 3.7 which contains the percentages of couples reflected in the RAPS survey data. There were 469 enlisted males and 546 enlisted females, married to another enlisted Air Force member who completed the survey. It is interesting to note that there were no E-1 respondents to the survey. This reflects the distribution of the underlying population. Of all enlisted join spouse couples, only 0.34 percent involve a marriage to an E-1. These tables

Table 3.6

Percentage of Couples in Each Pair of Enlisted Ranks in Population.

	Husband's Rank									
Wife's Rank	E1	E2	E3	E4	E5	E6	E7	E8	E9	TOTAL
E1	.06	.03	.06	.03	.02	-	-	-	-	.2
E2	.04	.27	.71	.39	.09	.01	-	-	-	1.5
E3	.03	.27	6.83	6.44	2.11	.31	.11	-	-	16.0
E4	.02	.03	2.09	17.37	13.83	2.29	.68	.08	.03	36.4
E5	.01	.01	.36	4.59	17.69	9.33	3.09	.56	.12	35.8
E6	-	-	.01	.13	1.97	3.70	2.15	.46	.23	8.8
E7	-	-	-	-	.94	.34	.60	.13	.08	1.5
E8	-	-	-	-	-	.02	.03	.03	.01	.1
E9	-	-	-	-	-	.01	-	.01	-	.0
TOTAL	0.2	0.6	10.1	28.9	36.6	16.0	6.7	1.3	0.5	100

(AFMPC report,1985:1-2)

indicated that even though the sample which took the survey comprised less than 5 percent of the entire join spouse population the rank distribution of couples is very close to the underlying population.

Table 3.7

Percentage of Couples in Each Pair of Enlisted Ranks in Sample.

	Husband's Rank									
Wife's Rank	E1	E2	E3	E4	E5	E6	E7	E8	E9	TOTAL
E1	-	-	-	-	-	-	-	-	-	.0
E2	-	-	.1	.1	.1	-	-	-	-	.3
E3	-	.4	7.2	7.8	2.7	.6	.3	-	-	19.0
E4	-	-	1.9	13.8	13.0	3.2	1.0	.2	-	33.1
E5	-	-	-	4.8	19.9	9.1	3.5	.6	.1	38.0
E6	-	-	-	.4	2.7	3.1	1.9	.2	-	8.3
E7	-	-	-	-	.1	.2	1.0	.2	-	1.5
E8	-	-	-	-	-	-	-	.1	-	.1
E9	-	-	-	-	-	-	-	-	-	.0
TOTAL	0	.4	9.2	26.9	38.5	16.2	7.7	1.3	.1	100

Computer Resources

HQ MPC/YPS provided the RAPS data responses a magnetic tape. The AFIT VAX 11-780 was used both for data storage as well as for data manipulation and analysis. The data was initially processed by means of several FORTRAN programs. These FORTRAN programs are explained below and are listed in Appendix E. The Biomedical Data Processing (BMDP) statistical software package was used to perform the statistical analysis. Additional information on the BMDP software package can be found in the BMDP manual (Dixon et al., 1983).

Data Manipulation

The RAPS data was transformed into a smaller set which consisted of 1033 enlisted members married to enlisted members. In addition, the number of variables was reduced to those required for data investigation and multivariate analysis. The FORTRAN program REDUCE was used to accomplish the data set reduction. It can be found in Appendix E. The data elements in the reduced set are listed in Table 3.8.

To perform the statistical analysis the alphabetic responses were converted to numeric values. When feasible, the responses were converted into 0,1 variables. When a specific response had a range of values (length of marriage greater than 2 years but less than 4) the average value replaced the alpha character (i.e. 3). The FORTRAN program

which accomplished this transformation is called TRANSLAT and if found in Appendix E. The values given to the RAPS data are as in column 4 of Table 3.8.

Table 3.8

REDUCED RAPS DATA FORMAT

Field	Description	Range	Converted Range
1	Q2-Length of current marriage	A-H	2-20
2	Q3-Rank	A-P	1-9
3	Q4-Spouse's rank	A-P	1-9
4	Q5-Sex	A-B	0-1
5	Q6-TAFMS completed	A-H	1-25
6	Q7-Plan to stay 20 years or more	A-D	0-1
7	Q8-Current career status	A-E	1-3
8	Q11-Responsible for dependent children	A-E	0-1
9	Q15-Q16-first two digits of AFSC	NN	omitted
10	Q17-Q18-second two digits of AFSC	NN	omitted
11	Q22-longest time acceptably separated (mos)	A-H	6-65
12	Q23-total time in career acceptable away (mos)	A-J	6-120
13	Q24-in 7 asgns, how many acceptable away	A-H	0-7
14	Q25-Spouse accom tour, you get short asgn	A-E	0-1
15	Q26-Spouse accom tour, you get asgn 13-18mos	A-E	0-1
16	Q27-Spouse accom tour, you get asgn 19-24mos	A-E	0-1
17	Q28-Spouse accom tour, you get asgn 25-30mos	A-E	0-1
18	Q29-Spouse accom tour, you get asgn 31-36mos	A-E	0-1

This data was used to answer the research questions which dealt with how enlisted members think they would respond to an assignment involving a family separation. As indicated in chapter I, these questions include:

2) Is the retention decision of join spouse couples facing separation affected by the length of the separation?

3) Which factors are more significant in predicting whether an Air Force join spouse enlisted member will accept an assignment that involves a family separation?

4) Do those who intend to stay in the Air Force indicate

that they are more likely to accept assignments involving family separation compared with those who have not decided to make the Air Force a career?

Descriptive Statistics

Descriptive statistics for the RAPS respondents is shown in the results chapter, Chapter V. These include the distribution of couples by ranks. In addition, statistics are listed on each of the variables of interest. These include the total frequency, the mean, the standard deviation, the standard error of mean, and the range of values.

IV. METHODOLOGY

Introduction

The purpose of this chapter is to explain the statistical techniques used in this research effort and to relate them to the research questions of interest. The techniques used include linear regression, discriminant analysis, and logistic regression. Linear regression was used in the analysis of the join spouse historical personnel data to determine what, if any, linear relationship existed between the length of separation and the variables representing rank, AFSC, and dependents. Discriminant analysis was used to examine the nature of group differences in both the Rapid Access Personnel Survey Data (RAPS) and the join spouse personnel data. Logistic regression was used on the RAPS data to examine the relationship of the dependent variable representing the acceptance or rejection of an assignment, to the other variables. In addition to a discussion of these three techniques, the hypotheses which were tested during the research effort and the assumptions under which they apply are also covered in this chapter.

Linear Regression

Linear Regression is a statistical technique which is used to model the relationship between one or more response (or dependent) variables and one or more predictor (or independent) variables. There are many excellent texts which

provide a complete discription of this technique. Texts by Green (1978), Mendenhall et al. (1981), and Neter et al. (1985) provide a more detailed discussion for those who are interested. This section provides an overview of the techniques used in this study.

Mathematical models are attempts to describe a physical reality, but they are "approximations to reality rather than exact explanations of natural phenomena" (Mendenhall, 1968:49). Models can be subdivided into two groups, deterministic and probabilistic. A deterministic model predicts a response with little of no error of prediction. While, a probabilistic model contains a random component which attempts to explain the random variability of the response variable for specific values of the predictor variables (Mendenhall, 1968:48-52). Specifically,

> A linear regression model relating a random response Y to a set of independent variables $x_1, x_2, \ldots, x_k$ is of the form
>
> $$Y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \ldots + \beta_k x_k + \epsilon \qquad (1)$$
>
> where $\beta_0, \beta_1, \beta_2, \ldots, \beta_k$ are unknown parameters, ϵ is a random variable, and $x_1, x_2, \ldots x_k$ are known constants. We will assume that $E(\epsilon) = 0$ and hence that
>
> $$E(Y) = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \ldots + \beta_k x_k \qquad (2)$$
>
> (Mendenhall et al., 1981:424)

This model is called linear since Y is a linear function of the parameters $\beta_0, \beta_1, \beta_2, \ldots, \beta_k$. There is no requirement that the $x_1, x_2, \ldots, x_k$ be restricted to linear terms, they may actually represent a quadratic function of one or more variables. The x_i terms are functions of the

measured or observed predictor variables, in other words they are known entities.

The process of regression is used to estimate the values of the β_0, β_1, β_2,..., β_k, which are called the regression coefficients. One way of estimating the parameters β_0, β_1, β_2,...$\beta_k$is called the least square method. This method arrives at estimated values for the β_is which result in the smallest value of the sum of the squared deviations from the fitted model. If

$$\hat{y}_i = \hat{\beta}_0 + \hat{\beta}_1 x_{1i} + \ldots + \hat{\beta}_k x_{ki} \tag{3}$$

is used to derive the predicted value of y_i, then the deviations of the y_i from the predicted value is

$$y_i - \hat{y}_i = y_i - (\hat{\beta}_0 + \hat{\beta}_1 x_1 + \ldots + \hat{\beta}_k x_{ki}) \tag{4}$$

If there are n observations, the sum of squares of these deviations is called the sum of squares for error and is defined by the following;

$$SSE = \sum_{i=1}^{n} (y_i - \hat{y}_i)^2 \tag{5}$$

$$SSE = \sum_{i=1}^{n} [y_i - (\hat{\beta}_0 + \hat{\beta}_i x_{1i} + \ldots + \hat{\beta}_k x_{ki})]^2 \tag{6}$$

In order to minimize this equation to find the least squared deviation, it is differentiated with respect to each of the β_is. These partial derivatives are then set equal to zero and the k equations in k unknowns are solved simultaneously. The estimators of β_i, for i = 0 to k, that minimize the SSE are defined to be b_i, for i = 0 to k (Mendenhall,

1968: 103-107; Neter et al., 1985:23-46). For a complete derivation of the equations for solving the least square estimators see Mendenhall et al., 1981.

If the ϵ_i in equation (1) have the following properties: the ϵ_i are distributed $N(0,\sigma^2)$, $E(\epsilon_i) = 0$, and $Var(n_i) = \sigma^2$, then by the Gauss-Markov theory, the least square estimators $b_0, b_1,...b_k$ are unbiased and have minimum variance among all unbiased estimators (Neter et al., 1985:39). The properties of interest of these least squares estimators are:

1) $E(b_i) = \beta_i$, $i = 0,1,...,k.$ (7)
2) $S^2 = SSE/[n - (k + 1)]$ is an unbiased estimator of σ^2 (8)
(Mendenhall et al., 1981:443)

The variables x_i represent the measured or observed values of the predictor variables. These can be either qualitative or quantitative. An example of a quantitative variable in the join spouse data is the variable which represents the ratio of the member's AFSC to the entire enlisted population. Quantitative variables are measurable properties of physical objects. This type of variable is also known as interval-scaled data, since the interval between any two values can easily be determined. (Green, 1978;10). Interval-scaled data provides a basic categorical description with ordering of the elements and is characterized by a quantifiable separation between the ordered elements (Coakley, 1985).

The other type of variable, qualitative, represent

entities such as sex, status of dependents, or intention to stay in the Air Force. It is not possible to rank qualitative variables the way quantitative variables can be ranked and ordered. There are two scales which define qualitative variables. These are nominal-scaled and ordinal-scaled. Nominal-scaled data provides a basic categorical description with no ordering. The variable 'sex' is a good example of this type of variable. The other type of qualitative variable is ordinal-scaled. This type of data provides a basic categorical description with ordering. (Coakley, 1985). An example of an ordinal-scaled variable would be the responses to a survey which are coded A, B, and C which represent the choices 'least favorable', 'neutral', and 'most favorable'.

One way to identify the different classes of a qualitative variable is by the use of indicator, or dummy-coded variables. Traditionally n-1 indicator variables are used to identify participation in n different classes. For example, one variable x_i could represent sex, which of course has two classes, male and female. The coding procedure for this variable might be $x_i = 1$ if the i^{th} individual was female and $x_i = 0$ if the i^{th} individual was male (Green, 1978:9-11; Neter et al., 1985:328-335).

In this research effort, it was not known whether the rank variables should be represented by an nominal-scaled or by an ordinal-scaled variable. In one sense, rank represents an basic categorical description with order. Given two ranks

one can certainly determine which is greater. This would indicate that rank should be treated as an ordinal-scaled variable. On the other hand, one can also divide the entire group of enlisted ranks (E-1 to E-9) into nine mutually exclusive classes which can be coded with eight indicator variables as one would normally do for nominal-scaled data. Therefore, two different linear regression models were used to solve for the regression coefficients, with the final model being selected on the basis of goodness of fit. The first model classifies rank as an ordinal-scaled variable, while the second classifies rank as an nominal-scaled variable and uses dummy-coded variables to represent it.

The least square method of finding the unbiased estimators of the regression coefficients was used to determine the coefficients of the multiple linear regression model for length of separation. The variables in the length of separation (LOS) data base, which was derived from the join spouse data base, contained the following information:

1) length of separation (the criteria, or dependent variable)
2) rank of the husband
3) rank of the wife
4) status of dependents (yes or no)
5) AFSC percentage for the husband's AFSC
6) AFSC percentage for the wife's AFSC

The two regression equations which were hypothesized to model the relationship between the length of separation and the predictor variables are:

$$y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \ldots + \beta_5 x_5 + \beta_6 (x_4 x_5) + \beta_7 (x_4 - x_5) + \epsilon \quad (9)$$

and

$$y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \ldots + \beta_{20} x_{20} + \epsilon \qquad (10)$$

In equation (9), the variables represent the following:

y = the length of separation
x_1 = 1 if the couple has dependent children
= 0 otherwise
x_2 = husband's AFSC percentage
x_3 = wife's AFSC percentage
x_4 = husband's rank
x_5 = wife's rank

Note that the last term in equation (9) is an interaction terms and the second to last is a difference term. These were included in the model to determine if the effect of the husband's and wife's ranks interact in any way which influences the length of separation. It was hypothesized that if both spouses were both high in rank it might make it much more difficult for them to have a co-located assignment. Also, it was hypothesized that if there were a large difference in the spouse's ranks it might make it easier for them to be assigned together.

In equation (10), the variables represent the following:

y = the length of separation

x_1 = 1 if the couple has dependent children

= 0 otherwise

x_2 = husband's AFSC percentage

x_3 = wife's AFSC percentage

x_4 = 1 if the husband is an E-2

= 0 otherwise

x_5 = 1 if the husband is an E-3

= 0 otherwise

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x_{11} = 1 if the husband is an E-9

= 0 otherwise

x_{12} = 1 if the wife is an E-1

= 0 otherwise

x_{13} = 1 if the wife is an E-2

= 0 otherwise

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x_{20} = 1 if the wife is an E-9

= 0 otherwise

The results of the regression analysis of the join spouse data are contained in chapter V.

Discriminant Analysis

Discriminant analysis is a statistical technique which provides a means by which one can distinguish between members of two or more groups. It is a technique which allows one to predict group membership on the basis of the predictor variables. In other words, the data set can be divided into two or more sets as defined by the value of the criterion

variable and adequately predicted by a function of the predictor variables (Coakley, 1985). Green's text (1978), "Analyzing Multivariate Data", is an excellent source for a more detailed discussion of discriminant analysis.

Discriminant analysis was used in this research on the LOS data base to determine if there were any discernible difference in groups defined by different lengths of separation. If so, which variables provided the most information in predicting group membership. Discriminant analysis was also used with the RAPS data to determine which variables could be used to predict whether a join spouse member would accept or reject an assignment involving family separation.

> The basic idea behind two-group discriminant analysis is to reduce what may originally be a large set of multiple (and correlated) measurements on a set of persons or objects, to a single linear composite with values that maximally distinguish between members of the two groups. (Green, 1978:143)

The technique of discriminant analysis is used when it is suspected that there is a significant difference in the vectors of means, or centroids, for each of the different groups. The hypothesis tested by this procedure states that there is no difference between the group centroids. There are several methods which can be used to to develop two-group linear discrimination which is used to test this hypothesis. The most popular methods include Fisher's discriminant function, Mahalanobis' D^2, and a method using standardized distances. However, all of these methods produce exactly the

same set of classifications (Coakley, 1985).

In the case where there are two groups, a statistic which can be used to test the significance of the difference between the group centroids is Hotelling's T^2. This statistic is defined to be:

$$T^2 = (m_1 \cdot m_2)/(m_1 + m_2) \cdot d' C_w^{-1} d \qquad (10)$$

(Green, 1978:166)

Where m_i indicates the number of cases in each group, C_w is the pooled within group covariance matrix and d denotes the difference vector between group centroids. Hotelling showed that the following relationship held:

$$[\,(m-n-1)\,/\,n(m-2)\,] \cdot T^2 \text{ is distributed as } F_{[n,m-n-1]} \qquad (11)$$

(Green, 1978:166)

The F statistic is used to determine if the hypothesis being tested should be rejected or accepted. But, since the rejection value for the F test statistic must be found in a table, p-value of the F statistic is used to clarify the significance of the F statistic. The p-value is the "probability that the sample outcome could have been more extreme than the observed one" (Neter et al., 1985:12). The p-value is compared with the specific level of risk, or α level. If the p-value exceeds the α level than the hypothesis cannot be rejected, if it does exceed the α level than the hypothesis can be rejected. Throughout this research, an α level for rejecting the hypothesis was .05.

The discussion of discriminant analysis thus far, has

concentrated on discrimination between two groups. In the case where there are more than two groups, the test statistic is Wilks' lambda. This statistic is defined to be the ratio of the pooled within-group sum of the squares and cross products (SSCP) matrix and T, which is the total-sample SSCP matrix. The Wilks' lambda statistic is easy to calculate but, it is difficult to use as the test statistic for determining the rejection region for the null hypothesis. Therefore, two functions of Wilke's lambda generally used as a test statistic are Bartlett's V statistic and Rao's Ra statistic. The former is approximated by a chi-square distribution while the latter is approximated by the F distribution (Green, 1978:290-323).

The assumptions associated with and limitations of discriminant analysis (DA) are :

1) Multivariate normality
   - Predictor variable scores are indepedently and randomly sampled from a population of scores.
   - DA is robust to violations of multivariate normality if the violation is caused by skewness rather than outliers, there are approximately 20 degrees of freedom for error, and there are equal sample sizes.
2) Homogeneity of variance-covariance matrix.
   - DA is robust to nonhomogenity if sample sizes are equal.
   - If unequal sample sizes, scatterplots of scores on first two canonical discriminant variables must be evaluated for equality in size.
3) Linearity
   - Violation of the assumption of linearity leads to reduced power of the test.

(Coakley, 1985; Green, 1978:226-227)

If the predictor variable scores do not meet the requirement of being distributed multivariate normal and the

sample sizes are not equal, a stratified sampling can be taken from the data and used to perform the DA (Coakley, 1985).

Discriminant analysis was performed on the join spouse data set with the groups defined on the basis of the length of separation. In the analysis of the RAPS survey data, the groups were designated on the basis of the variable which reflected acceptance or rejection of the proposed assignment which involved a family separation.

The discriminant analysis results and the implications of these results are presented in Chapter V.

Logistic Regression

When the dependent variable is a binary indicator variable it is coded as '0' or '1'. The RAPS variable representing acceptance or rejection or an assignment is an example of a binary coded variable. A complete discussion of logistic regression is found in "Applied Linear Statistical Models", by Neter et al. (1985) and in the BMDP manual (Dixon et al., 1983).

Theoretical and empirical results indicate that, with a binary coded indicator variable, the shape of the response function is sometimes an S-shaped curve which can be mathematically represented by a logistic response or 'logit' function (Neter et al., 1985:361-362). The logistic function is given by:

$$E(Y) = \exp(\beta_0 + \ _1) \ / \ 1 + \ \exp(\beta_0 + \ _1) \qquad (12)$$

For simplicity this can be rewritten as:

$$E(Y) = \exp(u) / 1 + \exp(u) \qquad (13)$$

where $u = \beta_0 + \beta_1$

(Neter et al., 1985:362)

There are several interesting properties of the logistic response function. First, the mean response, E(Y), can be interpreted as a probability when the criterion variable is a binary indicator variable. Second, a very simple transformation, called the logit, or logistic transformation can linearize the response variable so that regression can be performed. For E(Y), as defined in equation (12), the transformation is defined to be:

$$E(Y)' = \ln (p / 1 - p) \qquad (14)$$

this reduces quite easily to :

$$E(Y)' = u = \beta_0 + \beta_1$$

(Neter et al., 1985:362)

These unique properties of the logistic response function were used during this research to develop probability functions for the RAPS variable which represented the acceptance or rejection of an assignment. Specifically, it was used to determine if those who intend to make the Air Force a career have a different probability of accepting assignments involving separation than do those who do not intend to stay. The results of the logistic regression and the analysis of these results is presented in Chapter V.

V. RESULTS

Introduction

This chapter presents the results of the statistical processes which were conducted during this research effort. The results from the statistical procedures of the join spouse personnel data are presented first followed by the results from the Rapid Access Personnel Survey (RAPS) on join spouse matters. The analytical conclusions from this data is presented immediately after each result. Final conclusions and recommendations are found in Chapter VI.

Join Spouse Data Base

The join spouse data, provided by AF Human Resources Laboratory (AFHRL), contained historical personnel data on enlisted members who were currently married to another Air Force enlisted member. This data was extracted from the end-of-year Universal Airmen Records (UAR) for the years 1980 through 1984. In addition, data was extracted from the June 1985 tape. A complete discription of this data is found in Chapter III.

In preparing the data for analysis, the records representing individuals who did not request join spouse assignment consideration were deleted from the join spouse data base. Figure 5.1 is a graphical display of the rank distribution of women across the six years of the study.

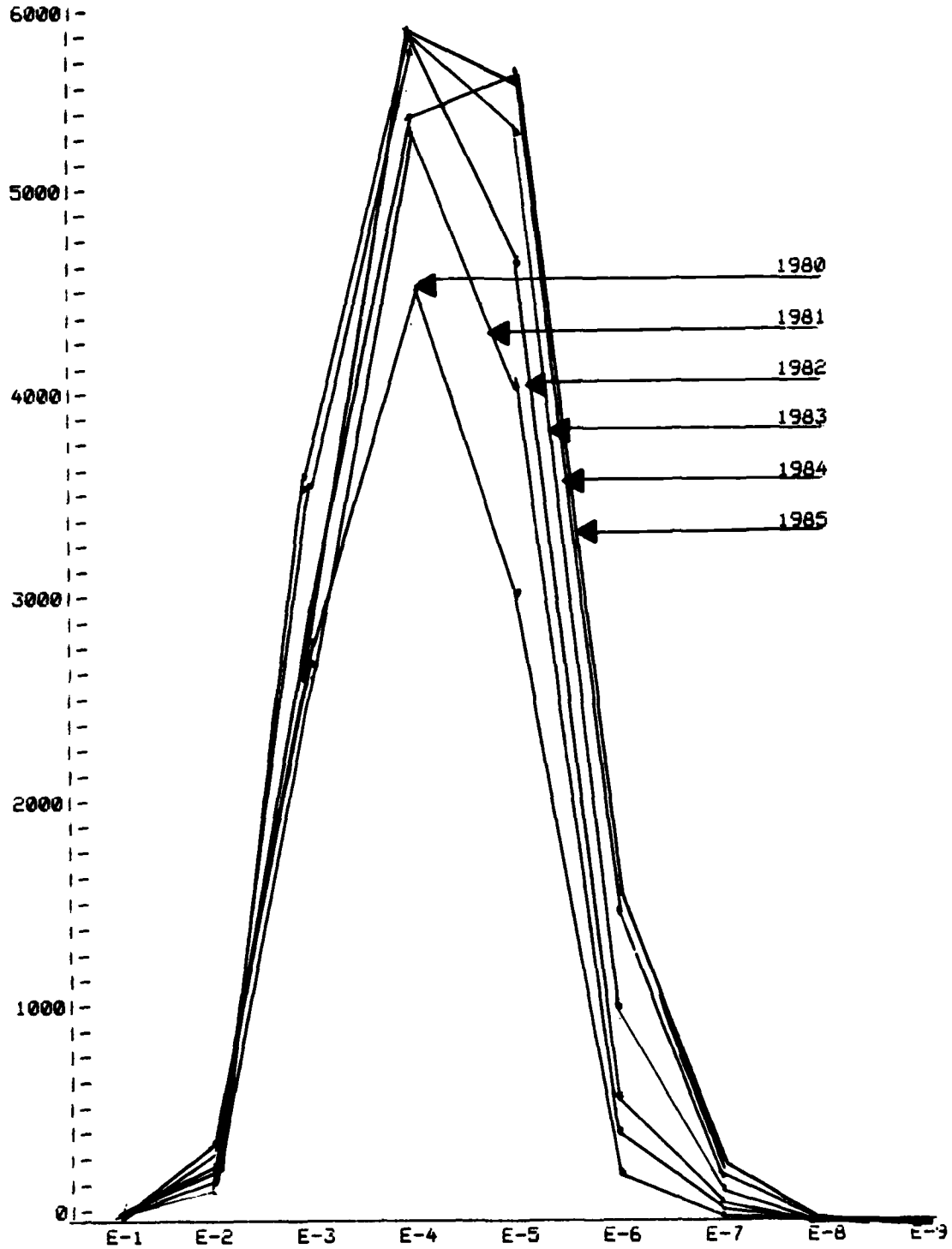

Figure 5.1 Rank Distribution of Join Spouse Women

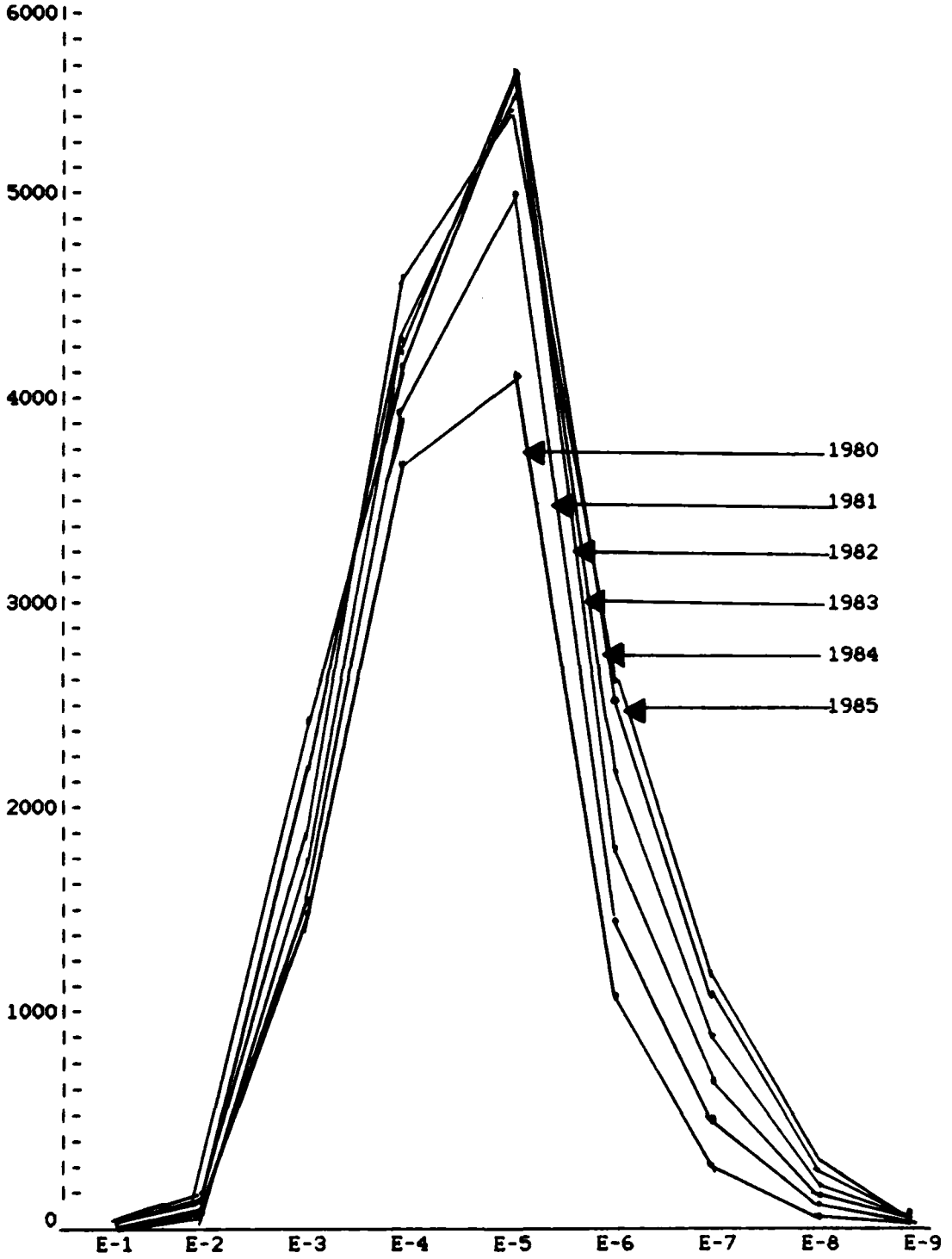

Figure 5.2 Rank Distribution of Join Spouse Men

Figure 5.2 is a graph of the rank distribution of the men over the six years of the study. These graphs indicate that there probably exists a linear relationship between some of the ranks and time.

Therefore, linear regressions were run on each specific enlisted rank for men and women across the years 1980 through 1984 to determine if there was a linear relationship between the number of members in each rank and the number of years away from the baseline year (1980). The 1985 data was excluded from this analysis since the time span between 1985 and 1984 data was not a full year. The results of the regressions on men's ranks are listed in Table 5.1 and the results of the regressions on women's ranks are found in Table 5.2. The independent variable YR is defined to be equal to the difference between the current year and 1980. The distribution of the residuals appeared to be fairly normal for this set of regressions and there was no indication of heteroscedasticity (i.e. nonconstancy of the variance of the response variable).

These regressions indicated that the number of join spouse men in the ranks E-5 through E-9 and join spouse women in the ranks of E-2 and E-5 through E-9 could be predicted within an accuracy of 95 percent. These linear regressions give personnel planners the ability to predict the growth of the number of join spouse individuals in some ranks over time. This should help the force planners assess the impact

of increasing numbers of join spouse individuals especially in the higher ranks.

Table 5.1

Results of Regressions on Years Since 1980
For Each Rank - Men

independent variable	dependent variable	R)	F Ratio	p(tail)	linear regression
YR	E-9	.9064	29.042	.0125	E9 = 26 + 8.6(YR)
YR	E-8	.9547	63.209	.0042	E8 = 41 + 34.8(YR)
YR	E-7	.9993	4289.027	.0000	E7 = 331 + 171.9(YR)
YR	E-6	.9978	1357.609	.0000	E6 = 1138 + 353.5(YR)
YR	E-5	.7816	10.734	.0466	E5 = 4472 + 384.8(YR)
YR	E-4	.6673	6.081	.0914	NOT SIGNIFICANT
YR	E-3	.0397	0.124	.7479	NOT SIGNIFICANT
YR	E-2	.0754	0.245	.6548	NOT SIGNIFICANT
YR	E-1	.0823	0.269	.6399	NOT SIGNIFICANT

Table 5.2

Results of Regressions on Years Since 1980
For Each Rank - Women

independent variable	dependent variable	R)	F ratio	p(tail)	linear regression
YR	E-9	.0833	0.273	.6376	NOT SIGNIFICANT
YR	E-8	.5647	3.892	.1431	NOT SIGNIFICANT
YR	E-7	.9695	95.438	.0023	E7 = 8 + 37.6(YR)
YR	E-6	.9748	115.920	.0017	E6 = 95 + 297.7(YR)
YR	E-5	.9649	82.392	.0028	E5 = 3230 + 624.1(YR)
YR	E-4	.4402	2.359	.2221	NOT SIGNIFICANT
YR	E-3	.1713	0.620	.4886	NOT SIGNIFICANT
YR	E-2	.8376	15.474	.0293	E2 = 272 - 27.2 (YR)
YR	E-1	.0503	0.159	.7168	NOT SIGNIFICANT

Table 5.3 shows the descriptive statistics on the length of separation (LOS) summary data base developed during the join spouse data processing sequence. The LOS data base was produced by the program PERCENT and contained a record for each couple who experienced a simultaneaous move or a separation due to reassignment. Each record contained the following variables: length of separation, husband's rank, wife's rank, percentage of husband's AFSC, percentage of wife's AFSC, 1st two digits husband's AFSC, 1st two digits wife's AFSC.

Table 5.3

LOS Descriptive Statistics

Variable Name	Mean	Standard Deviation	St. Err of Mean	Range of Values
length of separation	3.125	5.845	.0577	52.000
husband's rank	4.990	1.093	.0108	8.000
wife's rank	4.525	.892	.0108	8.000
husband's AFSC (percent)	4.8	2.8	.03	9.2
wife's AFSC (percent)	4.3	2.5	.02	9.1

The statistic of greatest interest developed from the join spouse data in the LOS data base is the mean length of separation (Lensep) in months. From the discriptive statistics above, the average length of time that an enlisted join spouse couple has been separated as a result of a permanent change of station (PCS) move is only about three months. This statistic had a standard deviation of almost six months which indicated that there was significant variation in the lengths of separation. A summary of the number of members in the LOS data base in each AFSC is found in Table 5.4.

Table 5.4

Final Summary of Enlisted AFSCs - LOS Data Base

AFSC 10	FIRST SERGEANT	39 MALES	2 FEMALES
AFSC 11	AIRCREW OPERATIONS	162 MALES	8 FEMALES
AFSC 12	AIRCREW PROTECTION	40 MALES	34 FEMALES
AFSC 20	INTELLIGENCE	442 MALES	420 FEMALES
AFSC 22	PHOTOMAPPING	0 MALES	0 FEMALES
AFSC 23	AUDIOVISUAL	61 MALES	92 FEMALES
AFSC 24	SAFTEY	48 MALES	29 FEMALES
AFSC 25	WEATHER	67 MALES	69 FEMALES
AFSC 27	COMMAND CONTROL SYSTEM OPERATIONS	371 MALES	453 FEMALES
AFSC 29	COMMUNICATIONS OPERATIONS	165 MALES	324 FEMALES
AFSC 30	COMMUNICATIONS OPERATIONS	528 MALES	312 FEMALES
AFSC 31	MISSILE ELECTRONIC MAINTENANCE	41 MALES	17 FEMALES
AFSC 32	AVIONICS SYSTEMS	570 MALES	386 FEMALES
AFSC 34	TRAINING DEVICES	42 MALES	28 FEMALES
AFSC 36	WIRE COMMUNICATION SYSTEM MAINT.	85 MALES	16 FEMALES
AFSC 39	MAINTENANCE MANAGEMENT SYSTEMS	59 MALES	80 FEMALES
AFSC 40	INTRICATE EQUIPMENT MAINTENANCE	23 MALES	9 FEMALES
AFSC 41	MISSILE SYSTEM MAINTENANCE	26 MALES	16 FEMALES
AFSC 42	AIRCRAFT SYSTEM MAINTENANCE	820 MALES	628 FEMALES
AFSC 43	AIRCRAFT MAINTENANCE	825 MALES	234 FEMALES
AFSC 44	MISSILE SYSTEM MAINTENANCE	14 MALES	9 FEMALES
AFSC 46	MUNITIONS AND WEAPONS MAINTENANCE	441 MALES	116 FEMALES
AFSC 47	VEHICLE MAINTENANCE	109 MALES	35 FEMALES
AFSC 49	SYSTEM INFORMATION	173 MALES	221 FEMALES
AFSC 51	COMPUTER SYSTEMS	89 MALES	105 FEMALES
AFSC 54	MECHANICAL/ELECTRICAL	225 MALES	76 FEMALES
AFSC 55	STRUCTURAL/PAVEMENTS	268 MALES	121 FEMALES
AFSC 56	SANITATION	32 MALES	12 FEMALES
AFSC 57	FIRE PROTECTION	96 MALES	19 FEMALES
AFSC 59	MARINE	2 MALES	0 FEMALES
AFSC 60	TRANSPORTATION	325 MALES	349 FEMALES
AFSC 61	SUPPLY SERVICES	57 MALES	79 FEMALES
AFSC 62	FOOD SERVICES	71 MALES	102 FEMALES
AFSC 63	FUELS	166 MALES	37 FEMALES
AFSC 64	SUPPLY	698 MALES	1167 FEMALES
AFSC 65	PROCUREMENT	36 MALES	82 FEMALES
AFSC 66	LOGISTIC PLANS	29 MALES	26 FEMALES
AFSC 67	ACCOUNTING, FINANCE & AUDITING	194 MALES	321 FEMALES
AFSC 69	MANAGEMENT ANALYSIS	14 MALES	23 FEMALES
AFSC 70	ADMINISTRATION	654 MALES	1710 FEMALES
AFSC 73	PERSONNEL	373 MALES	660 FEMALES
AFSC 74	MORALE WELFARE AND RECREATION	41 MALES	65 FEMALES
AFSC 75	EDUCATION & TRAINING	107 MALES	190 FEMALES
AFSC 79	PUBLIC AFFAIRS	31 MALES	53 FEMALES
AFSC 81	SECURITY POLICE	866 MALES	267 FEMALES
AFSC 82	SPECIAL INVEST. & COUNTER INTELL.	22 MALES	5 FEMALES
AFSC 87	BAND	13 MALES	16 FEMALES

Table 5.4 Continued

AFSC 90 MEDICAL	482 MALES	878 FEMALES
AFSC 92 AIRCREW PROTECTION	83 MALES	100 FEMALES
AFSC 98 DENTAL	90 MALES	219 FEMALES
AFSC 99 MISCELLANEOUS	34 MALES	29 FEMALES

The distribution of men and women in each rank of the LOS data base is found in Table 5.5. The AFSC distributions as well as the rank distributions for each individual year of the join spouse data base can be found in Appendix C.

Table 5.5

The Rank Distribution of Women and Men in the LOS Data Base

In the rank E-1 there are	29	women and	12 men
In the rank E-2 there are	70	women and	49 men
In the rank E-3 there are	981	women and	562 men
In the rank E-4 there are	3858	women and	2674 men
In the rank E-5 there are	4184	women and	4203 men
In the rank E-6 there are	990	women and	1824 men
In the rank E-7 there are	128	women and	748 men
In the rank E-8 there are	8	women and	136 men
In the rank E-9 there are	1	women and	41 men
Totals	10249	woman	10249 men

Tables 5.4 and 5.5 are presented to show that the LOS sample data base reflects the enlisted join spouse population. The rank structure as well as the distribution of the AFSCs in the LOS data base compare very well with the average of the six individual years of the join spouse data base. Since the LOS data base was derived from the successively updated join spouse data base this should not be surprising. However, in the process of updating the join spouse data base, many hundreds of individuals were deleted and added each year. The records that were deleted

represented individuals who were no longer join spouse couples, either they got divorced, or one or both left the service during the year. Once any of these situations occured, the individual was no longer identified as an enlisted member with an enlisted spouse and they were not included in the data base provided by AFHRL. In spite of all the couples that fell out duing the data processing, the end result is a good representation of the underlying population.

The LOS data base was also used to investigate the relationship between length of separation and the couple's ranks, AFSCs, and whether they have dependents. The first step in the investigative process was to characterize the length of separation. Table 5.6 describes the distribution of the variable length of separation (Lensep) in the final LOS data base. Lensep was the variable which contained the number of months a couple was separated when one (or both of them) moved to a new location. Those cases where the length of separation was equal to zero indicated a simultaneous move of both spouses to a new assignment location. It is significant that over 65 percent of the couples were reassigned at the same time as their spouse. In addition, of all who were separated 80 percent were separated for less than 6 months.

Another fact to consider when examining the distribution of the length of separations is that most of the 12 and 13 month separations represented cases where one or both of the members had a remote assignment. Family separations are unavoidable in this type of assignment for all Air Force

personnel since the Air Force can not accomodate moving families to most remote locations. However, even including remote tours, 95 percent of the couples were separated for less than 13 months. This distribution of Lensep clearly indicates that the Air Force has been quite successful in keeping couples together over the last six years.

Table 5.6

Distribution of the Length of Separation

Length of Separation (months)	Count	Percents Cell	Cumulative
0	6673	65.1	65.1
1	502	4.9	70.0
2	314	3.1	73.1
3	236	2.3	75.4
4	166	1.6	77.0
5	123	1.2	78.2
6	114	1.1	79.3
7	103	1.0	80.3
8	113	1.1	81.4
9	90	.9	82.3
10	96	.9	83.2
11	109	1.1	84.5
12	774	7.6	91.9
13	324	3.2	95.0
14	87	.8	95.9
15	81	.8	96.7
16	56	.5	97.2
17	38	.4	97.6
18	36	.4	97.9
19	39	.4	98.3
20	25	.2	98.5
21	16	.2	98.7
22	12	.1	98.8
23	7	.1	98.9
24	33	.3	99.2
25-30	39	.4	99.6
31-36	11	.1	99.7
37-48	19	.2	99.9
49-52	7	.1	100.0

The distribution of the length of separation is significant in assessing the success of the join spouse program but, it is equally important to see how these length of separations are distributed over various subclasses of this entire join spouse population. The bar graphs found in Figures 5.3 and 5.4 display the average separation for each enlisted grade for both men and women. These graphs show that the average of Lensep is fairly stable in ranks above E-3 and does not differ significantly from the grand mean of 3.125. Also, the values of Lensep for men and women are fairly consistent for each rank. The values for E-9 are an exception, however since there is only 1 female E-9, this difference is not significant.

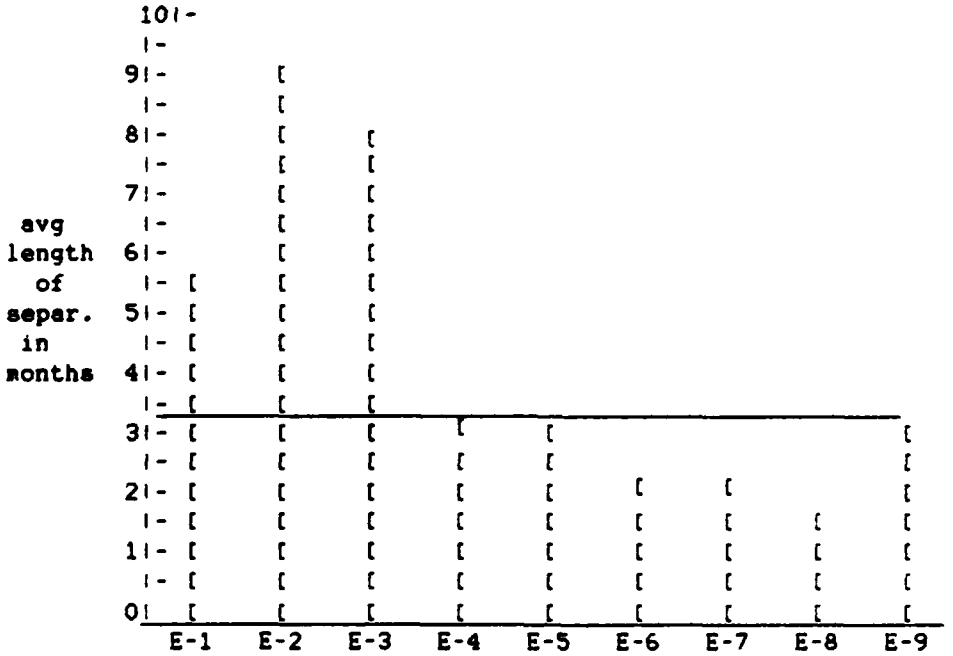

Figure 5.3 Average Length of Separation for Enlisted Men - by Rank

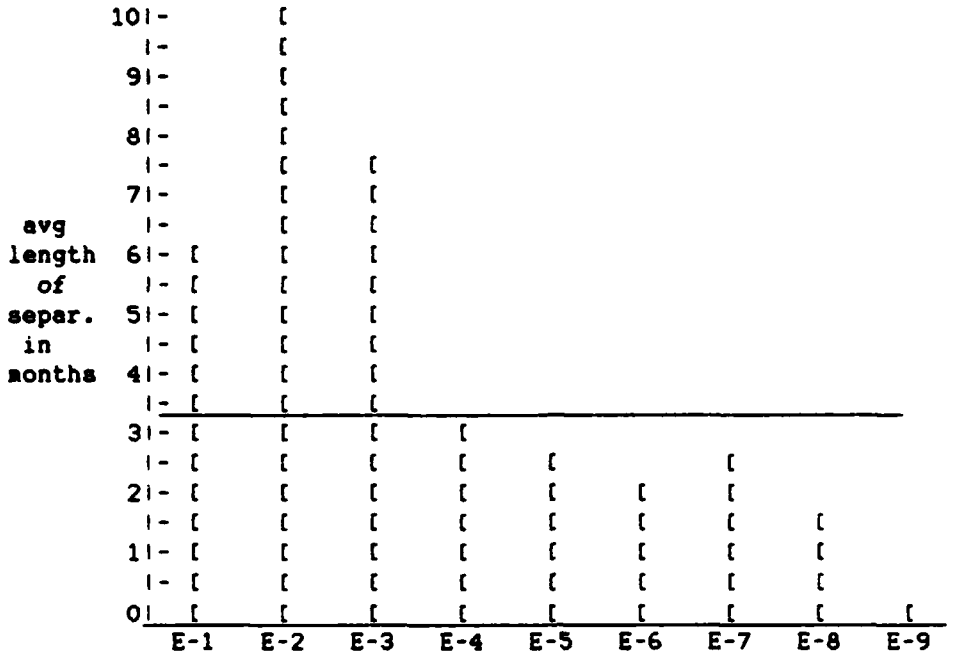

Figure 5.4 Average Length of Separation for Enlisted Women - by Rank

In addition to differences in length of separation due to rank, are there differences in length of separation discernible between groups that have dependents versus those that do not? Table 5.7 displays the differences in means between those who have dependents in their household versus those who do not. It also shows the average of the ranks for each category. More senior ranking enlisted members would be more likely to have dependents and this is supported by the differences in the mean ranks for men and women with and without dependents. But the difference in Lensep required further investigation.

Table 5.7

Statistics Based on Status of Dependents

Class	Count (# of couples)	Mean Lensep	Mean Rank Husband	Mean Rank Wife
No Deps	3976	4.515	4.66	4.21
With Deps	6272	2.244	5.20	4.72

The data presented in Table 5.8 shows that there is a relationship between length of separation and status of dependents, rank and sex.

Table 5.8

Statistics Based on Status of Dependents, Isolated by Rank

Sex	Rank	Without Dependents count	Without Dependents Lensep	With Dependents count	With Dependents Lensep	Total Population count	Total Population Lensep
Male	E1	9	6.2	3	3.3	12	5.5
	E2	43	9.8	6	2.5	49	8.9
	E3	423	8.6	138	5.5	561	7.8
	E4	1349	4.2	1325	2.2	2674	3.2
	E5	1435	3.9	2768	2.4	4203	2.9
	E6	476	3.2	1348	1.9	1824	2.3
	E7	201	3.1	547	1.8	748	2.3
	E8	25	3.3	111	1.3	136	1.7
	E9	15	5.0	26	1.3	41	3.1
Totals		3976		6272		10248	
Female	E1	20	5.6	9	4.0	29	6.0
	E2	64	10.6	6	8.0	70	10.4
	E3	740	8.4	240	5.3	980	7.7
	E4	1691	3.6	2167	2.2	3858	2.8
	E5	1196	3.4	2988	2.1	4184	2.5
	E6	223	2.5	767	1.9	990	2.0
	E7	40	2.9	88	2.2	128	2.4
	E8	2	0.0	6	2.2	8	1.6
	E9	0	-	1	0.0	1	0.0
Totals		3976		6272		10248	

With the exception of female E-8s (with a total count of only 8), the length of separation is consistently less for those individuals who have dependent children in their household than it is for those without. At this point the hypothesis that the means of Lensep for the two groups, with and without dependents, was tested for equality by performing an analysis of variance with dependents as the grouping factor. The results indicated that the means of Lensep are indeed statistically different with a p-value of .0000.

The next step in the analysis of the join spouse data was to determine what specific effects of the variables representing rank, AFSC, and status of dependents had on the variability in the length of separation. To this end, various regressions were attempted on the join spouse data, some using rank as a qualitative variable and some using rank as a quantitative variable. In each attempted regression there were strong indications that the general linear model was inappropriate for describing the length of separation as a function of ranks, dependency status, or AFSCs. The scatter plots indicated that length of separation was not linearly, quadraticly, or cubically related to ranks. In addition, there were strong indications of heteroscedasticity (nonconstancy of the error term variance) as well as nonnormality of the distribution of the error term. All this lead to a rejection of the use of the linear regression model as a descriptor of the relationship of the length of separation to ranks, dependents and AFSCs.

After the regression proved to be unfruitful, discriminant analysis was performed to determine if any of the variables could be used to predict which category of length of separation the case belonged to. Since homogeneity of the variance-covariance matrix could not be assumed, a stratified random sample of the LOS data was taken. This produced a data base with equal sample sizes on which to perform the discriminant analysis. The subset of data represented 516 cases for the 3 category test.

The results of discriminant analysis on the join spouse data base were mixed. Table 5.9 summarizes the statistical results of running the BMDP discriminant analysis program using various categorizations of the length of separation as the grouping variable.

Table 5.9

Summary of Discriminant Analysis on Join Spouse Data

Categories of LOS	Approx. F of Wilk's Lambda	Variables Entered	Percent Correctly Classified
0, 1-6, 7-12, 13-18, 19-24, 25-30, 31-36, over 36	6.69	wife's rank, dependents	21.7
0, 1-6, 7-12, 13-24, 25-36 over 36	8.83	wife's rank, dependents	28.5
0, 1-12, 13-24 25-36, over 36	10.75	wife's rank, dependents	29.1
0, 1-12, over 12	20.18	wife's rank, dependents	47.3

The best categorization of the LOS data had three categories; length of separation equal to zero, between 1 and 12 months, and greater than 12 months. The classification function for this discriminant analysis is found in Table 5.10.

Table 5.10

LOS Discriminant Analysis Classification Function

Group Variable	zero	1-12	over 12
wife's rank	5.837	5.539	5.031
dependents	1.406	0.586	0.2928
constant	-15.795	-13.867	-11.516

The classification matrix displaying the percentages of of cases which are correctly classified is found in Table 5.11. There was no difference between the straight classification matrix and the jackknifed classification matrix. In the jackknifed classification matrix "each case is classified into a group according to the classification functions computed for all the data except the case being classified" (Dixon, 1983:520).

Table 5.11

LOS Data File Discriminant Analysis Classification Matrix

Group	Percent Correct	Number of cases Classified into Group		
		zero	1-12	over 12
zero	73.3	126	31	15
1-12	20.9	91	36	45
over 12	47.7	66	24	82
total	47.3	283	91	142

Although this classification function is only marginally useful since it only classifies the cases correctly 47 percent of the time, it does reinforce the fact that the length of separation is related to whether the couple has dependent children or not. In addition, the length of separation is slightly related to the wife's rank. The classification matrix shows that it is fairly successful at identifying a separation of zero months, if indeed it was zero. But, the classification function does not discriminate a length of separation of 1-12 months very well from zero lengths of separation. The conclusion that one can draw from this is that even though length of separation is related to dependency status and wife's rank, there is certainly not a strong enough relationship to be able to predict length of separation.

The first research objective was to determine what, if any, relationship existed between the length of separation and the couple's ranks, AFSCs and whether or not they have

dependents. Two of these factors have been shown to have an influence on the length of separation, wife's rank and status of dependents.

This completes the results from the statistical processing of the join spouse data base and the LOS data base which was developed from the join spouse data base. The next section contains the results of the statistical processing of the RAPS data.

RAPS Data Base

The research questions to be investigated by analysis of the RAPS data base include the following:

2) Is the retention decision of join spouse couples facing separation affected by the length of the separation?

3) What factors are most significant in predicting whether an Air force member married to another Air Force member will accept an assignment that involves family separation?

4) Do those who intend to stay in the Air Force accept assignments involving family separation at a rate different form those who have not decided to make the Air Force a career?

This section describes the statistical processes which were conducted to answer these questions. It is important to remember that this is an analysis of survey responses to hypothetical assignments and that this data does not represent responses to actual reassignment opportunities. This is in contrast with the analysis of the join spouse data which does contain actual separations of join spouse

individuals during the last six years but does not relate to retention..

The first step in analysing the RAPS data was the development of descriptive statistics. Table 5.12 contains the descriptive statistics on the variables in the RAPS data base.

The next step in the statistical analysis of the RAPS data base was to perform a discriminant analysis (DA). Using the scatterplots from the first two connonical discriminat functions generated by the DA, it was determined that there was a strong likelyhood of nonhomogenity of the variance-covariance matrix. Since homogeneity of the variance-covariance matrix could not be assumed, subsets of the RAPS data with equal sample sizes were developed.

Table 5.12

RAPS Descriptive Statistics

Variable Name	Mean	Standard Deviation	St. Err of Mean	Range of Values
length of marriage(yr)	4.102	3.628	.1131	15
member's rank	4.610	1.056	.0392	7
spouse's rank	4.681	1.082	.0337	6
sex	0.539	0.499	.0156	1
TAFMS	7.337	4.730	.1474	24
intention to stay	0.568	0.496	.0154	1
status	1.982	0.773	.0241	3
dependents	0.532	0.499	.0156	1
time separated	11.487	9.929	.3107	65
total time away	23.241	22.352	.6975	114
number assig. away	1.244	0.969	.0304	7
short tour	0.684	0.465	.0145	1
18 month	0.400	0.490	.0153	1
24 month	0.150	0.357	.0112	1
30 month	0.052	0.221	.0062	1
36 month	0.045	0.207	.0064	1

The data was divided into five groups with each group containing the responses of 206 survey respondents. The first group was used as the response set for the 12 month assignment, the second group was used as the response set for the 18 month tour, and so on. Two new variables were created during the BMDP discriminant analysis procedure. These were 'tourlength', which contained the values 12, 18, 24, 30, or 36, and 'dependent' which contained the indicator variable for the assignment decision, i.e. reject or accept.

The discriminant analysis of this modified data set resulted in the identification of two variables, 'tourlength' and 'statu's as being most important in predicting whether one would refuse or accept the assignment. The variable 'status' had three values which represented the individual's reenlistment status. These categories were first-termers, second-termers and career airmen. Table 5.13 contains the jackknifed classification matrix of the RAPS data file.

Table 5.13

RAPS Data File Discriminant Analysis Classification

Group	Percent Correct	Number of Cases Classified into Group	
		Refuse	Accept
Refuse	75.1	194	63
Accept	80.2	51	207
Total	77.7	245	270

The discriminant analysis classification function used to classify the cases into two groups is found in Table 5.12. The two groups represent those who would refuse the assignment involving various length of separation and those who would accept it. Those who refuse the assignment are those that would separate from the Air Force or retire if eligible, rather than accept the assignment.

Table 5.14

RAPS Discriminant Analysis Classification Function

Group Variable	Reject	Accept
status	2.96274	3.33986
tourlength	0.51914	0.32334
constant	-10.49518	-6.99263

It is clear from the the results printed in the two previous tables that 'tourlength' and 'status' are good predictors, when used in the classification function, of whether an enlisted join spouse individual would take an assignment or refuse it.

The dependent variable used in the discriminant analysis was a binominal value which represented the individual's reaction to a hypothetical assignment involving a family separation. The values of the variable were '0' for rejection and '1' for acceptance. This categorization of the dependent variable suggested that a stepwise logistic

regression be attempted with the data set. The stepwise logistic regression was run on the RAPS data with tourlength as the independent variable. Tourlength was defined to be a categorical variable with values equal to 12, 18, 24, 30, and 36 months. The experimental design for this regression is found in Table 5.15.

Table 5.15

Logistic Regression Experimental Design for Tour Length

Value	Frequency	Design Variables (1)	(2)	(3)	(4)
12	205	-1	-1	-1	-1
18	205	1	0	0	0
24	203	0	1	0	0
30	206	0	0	1	0
36	206	0	0	0	1

The equation for the probability of rejecting the assignment developed by the stepwise logistic regression was significant with a chi-square goodness of fit equal to 7.643 (p-value = .054). The equation for the probability of rejecting one of the five assignment lengths is:

$$q = \frac{\exp(u)}{1 + \exp(u)} \qquad (1)$$

$$\text{for} \quad u = 1.496 - 1.091x_1 + .2956x_2 + 1.379x_3 + 1.379x_4 \qquad (2)$$

The graph of these five specific values is displayed in figure 5.5. Note that equation (2) uses indicator variables as defined in the design of experiment displayed in Table 5.15. This equation shows what percentage of join spouse

couples say they would refuse an assignment of exactly 12, 18, 24, 30, and 36 months.

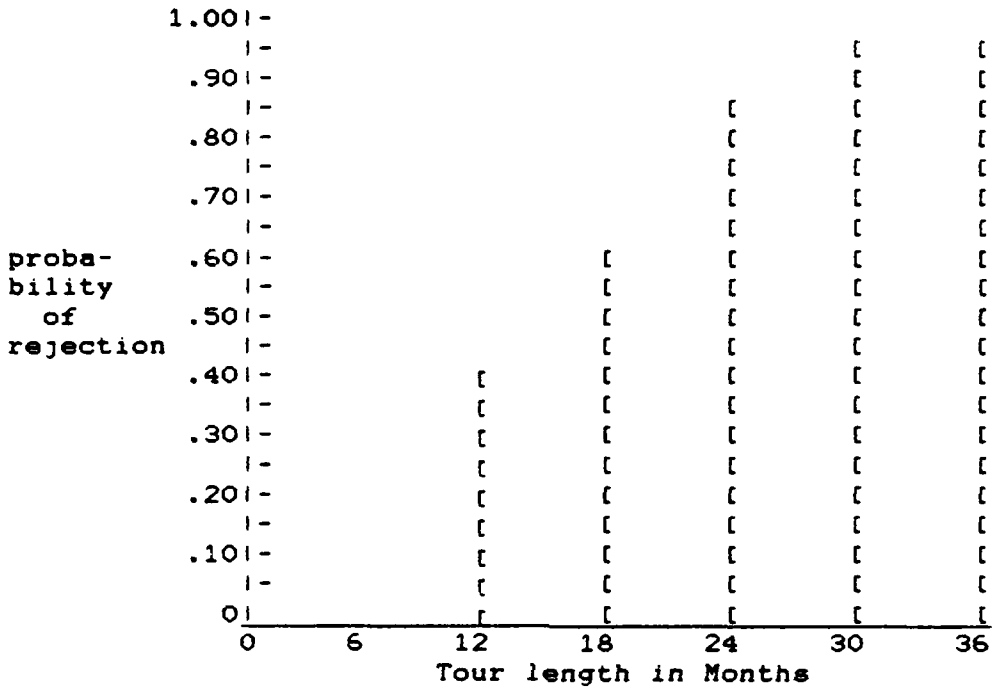

Figure 5.5 Percentage of Rejections by Tour Length

The last research question concerns the difference in the acceptance rate for those who plan to make the Air Force a career and those who do not. This question was investigated by determining if there was a significant and definable difference in the mean response rate between two groups divided on the basis of the variable which represented their intention to make the Air Force a career.

The first step was to determine if the group means of the variable which contained the response to the assignment decision were statistically different. Performing a two sample t-test, the means for the for those who intend to stay

was different from those who do not at a significance level (p-value = .0302). Once it was determined that there was a difference in the group means, a logistic regression was run on the two groups designated by the variable STAY. However, the results from the logistic regression on the group not intending to stay was not significant (p-value = .436). So the logistic regressions could not be compared.

The analysis of the join spouse data that was described in the first part of this chapter identified a difference in the length of separation for the two groups defined by the whether the couple has dependents or not. Is there a significant difference in the response rate for accepting or rejecting an assignment between the two groups in the RAPS data defined by whether they have dependents or not? In order to answer this question, the same procedure was used that was used to examine the difference between career and non-career individuals. The ANOVA results indicated that there was no significant difference between the means of the two groups. The hypothesis that the group means were equal could not be rejected in this case (p-value = .8339).

This concludes the results and analysis of the statistical processing of the join spouse and RAPS data set. The final chapter contains recommendations and conclusions.

VI. CONCLUSIONS AND RECOMMENDATIONS

Introduction

The primary objective of this research was to investigate the relationship between the length of family separation of Air Force enlisted join spouse couples and the couple's ranks, AFSCs, and status of dependents. Secondary objectives included determining if the decision to accept an assignment is affected by the length of separation (LOS) or the intention to remain in the Air Force, and determining which variables are more significant in predicting whether a join spouse individual will reject or accept an assignment involving a family separation. These research objectives were achieved. In addition to accomplishing the primary and secondary objectives, some significant observations in related areas were made. This chapter summarizes the conclusions from the analysis and recommends additional areas for study.

Conclusions

There were several areas where significant conclusions were drawn from this research. These include predicting LOS, calculation of the mean LOS, distribution of LOS, predicting growth of join spouse members by rank, assignment rejection/acceptance classification function, probability functions of rejecting an assignment, and effect of career intentions on the probability of rejecting an assignment.

Predicting Length of Separation

The first conclusion concerning the LOS experienced by an Air Force enlisted couples when one or both are reassigned is that this variable cannot be described by a linear regression model containing the variables of interest. It is possible that the addition of other predictor variables might stabilize the variance of the error term, but this is unlikely. However, the results of the discriminant analysis indicate that LOS is related to the wife's rank and whether the family has dependent children. The discriminant function developed using these two variables, however, was only able to correctly categorize 47 percent of the cases. The cause for this was considered to be the largely unexplained variability of the dependent variable, LOS.

The classification function, generated by the discriminant analysis process, is found in Table 5.10 of the results chapter.

Mean Length of Separation

A significant finding of this research was the quantification of the mean of LOS for enlisted join spouse couples who experienced a moved in the last six years. The grand mean of the length of separation, developed from over 10,000 couples during the last six years, was only 3.125 months. There was also a strong indication that join spouse families with dependents experienced shorter separations than

did those without dependents. A test for equality of means indicated that there was a significant difference in the length of separation between those with dependents and those without. The mean for those who had dependents was 2.2 months while the mean for those who did not have dependents was 4.5 months.

In investigating this phenomena, it was discovered that the mean LOS for men and women in higher ranks did not significantly vary from the grand mean of 3.125, but there was a significant positive divergence from the grand mean for the LOS of those in ranks E-1, E-2, and E-3. Two possible explanations for this divergence were examined. First, in the three lower pay grades there were significantly more couples without dependents then there were with dependents. This was exactly the opposite of the situation for ranks above E-4. The existance of a difference between the mean LOS for those with and without dependents has already been discussed. The reason why this difference occurred had to be investigated. Using the responses to the RAPS survey, the assignment acceptance variable was divided into two groups, those with and without dependents. When a test of the equality of means was performed on these two groups it was discovered that there was no significant difference between the rate of willingness to reject an assignment for those with and without dependents.

There are several other possible explanations for the difference between the mean LOS of those who have dependents

and those who do not. Perhaps those with dependents do not take the 'best' possible assignment if it means being separated from family, and perhaps they leave the Air Force more often than those without dependents rather than take assignments away from their families. Further research on the difference between the LOS of those with and without dependents is needed before this question can be answered with certainty.

A second possible explanation for the higher mean LOS for those in the three low ranks is that a much higher percentage of these individuals are attending technical training schools. According to the Air Force regulation concerning the assignment of enlisted members, one of the cases where "joint assignment is difficult or impracticable" is where one of the members is assigned to a school for training (AFR 39-11, 1985:10-1). This explanation is only a hypothesis which was not verified during this research due to time and data limitations. This hypothesis too, requires further study.

Distribution of Length of Separation

Even though this research was not intended to verify the success of the Air Force join spouse program, it certainly supports the belief that the program is working extremely well. The distribution of the LOS indicated that of all join spouse enlisted couples that moved in the last 6 years, 65 percent moved simultaneously and had no separation at all.

In addition, 95 percent of all couples were reunited with their spouse within 13 months. This means that during the last 6 years, 95 percent of all join spouse couples who were separated, including those on remote tours, were reunited with their spouse in 13 months or less.

This should be very reassuring news for personnel planners who have had, up to this time, only static indicators of success for this program. These static indicators, such as the togetherness rate, are important for program evaluation but they do not provide a complete understanding of the process. The addition of a dynamic view of the join spouse program substantiates the opinion that the Air Force cares about its join spouse members and works at keeping them together.

Predicting Growth of Join Spouse Members in Each Rank

Another unexpected benefit of this research was the ability to predict growth in the number of higher ranking join spouse men and women. This is less true for women than it is for men because of the small number of women in the top two enlisted ranks. The growth of join spouse individuals in the higher ranks has shown a steady climb over the last six years and will continue to do so at predictable rates as long as there are no major changes in programs that affect join spouse couples.

An increase in the annual number of women enlistees, for example, will have some inflationary effect on the numbers of

individuals in each rank, but will have little effect on the higher ranks for at least 5 years. This is true since it will take that long for these new individuals to work their way up the ranks and there are actually very few marriages that have a difference in ranks greater than three steps. In fact, the togetherness matrix for March 1985 showed that less than 0.4 percent of all enlisted join spouse marriages are between individuals whose ranks differ by more than 3 grades and only about 2.3 percent differ by more than 2 grades (AFMPC, 1985:1-2).

The equations which can be used to predict the growth in join spouse individuals by rank and sex are found in the results chapter in tables 5.1 and 5.2.

Assignment Rejection/Acceptance Classification Function

Thus far, the conclusions have been based primarily on the analysis of the historical personnel join spouse data. The conclusions that follow are the results of the analysis of the RAPS survey responses. As such, the following results should be interpreted as representing what people think they might do rather than what they actually did.

The discriminant analysis of the RAPS data resulted in a very good classification function. The raps data responses were divided into two groups based upon the choice to accept or reject an assignment of length 12, 18, 24, 30, or 36 months. The two variables that provided the greatest separation of these two groups were 'tourlength' and 'status',

where status is the variable which indicates the reenlistment status; first-termer, second-termer or career airman. Both of these variables are intuitively appealing predictors of whether an individual would accept or reject an assignment separating them from their spouse.

The classification function developed in the process of the discriminant analysis accurately classified 78 percent of the cases. The classification function is found in Table 5.14.

Probability Functions of Rejecting an Assignment

Since the response variable representing whether one would accept or reject a hypothetical assignment involving a family separation was a binary coded variable, the logistic response function was derived. The results were very significant with 'tourlength' as the predictor variable.

The logistic regression was run with 'tourlength' defined as an indicator variable. This resulted in an equation that predicted the probabilities associated only with the specific values 12, 18, 24, 30 and 36 months. The responses for these five specific values represented the probability that an individual would refuse an assignment involving family separation with the associated tour length. The logistic regression function is presented in equations (1) and (2), chapter V and the associated bar graph is found in Figure 5.5.

Rejecting an Assignment

One of the primary objectives of this research was to determine if those who plan on making the Air Force a career would be more inclined to accept an assignment involving family separation than would those who do not plan on staying. Several excellent studies have show that intention to reenlist is an excellent predictor for subsequent reenlistment. Therefore, the mean rejection rate of the group who intends on staying in the Air Force should provide a better picture than the group as a whole. Those who do not intend on staying in the Air Force would be less likely to accept any family separation.

In order to investigate this question, the RAPS survey data was divided into two groups, those with a stated intention to stay and those without. The second step was to determine if there was a statistical difference between the means of the variable which contained the response to the assignment decision. There was a significant statistical difference between the two means.

The next step was to derive a separate logistic response function for both groups of respondents. Unfortuantely the logistic regression of one of the groups was not significant, and therefore no comparison could be made.

Recommendations

This research just scratched the surface of an emerging

phenomena, the join spouse couple. The small number of studies presented in the literature review shows that this is a relatively new area of interest, both for the military as well as for the civilian sector. But, it is an area of increasing interest since the numbers of dual-career couples in the military as well as the entire work force will continue to increase. There are many fertile areas for further research, especially now that the number of persons involved have increased to the point that a complete picture can be studied.

The first recommendation is for the Air Force to implement collection of the 'date of marriage' as a data point and include this information in the universal airman records (UAR). Much of the work for this study could have been avoided if this information were available. In addition, the data item currently in the UAR which provides the only means of matching husband's and wife's records, spouse's SSAN, should be verified on a regular basis. An average of 15 percent of the UAR records which were identified as having an enlisted spouse could not be used in this study because the spouse's SSAN was incorrect.

One way to collect the date of marriage and at the same time update the information on spouses is to have all airmen reaccomplish a modified military spouse information form (AF FORM 1048) at the time of a permanent change of station. The form 1048 could easily be modified to include the date of marriage. This would not only help the Air Force in future

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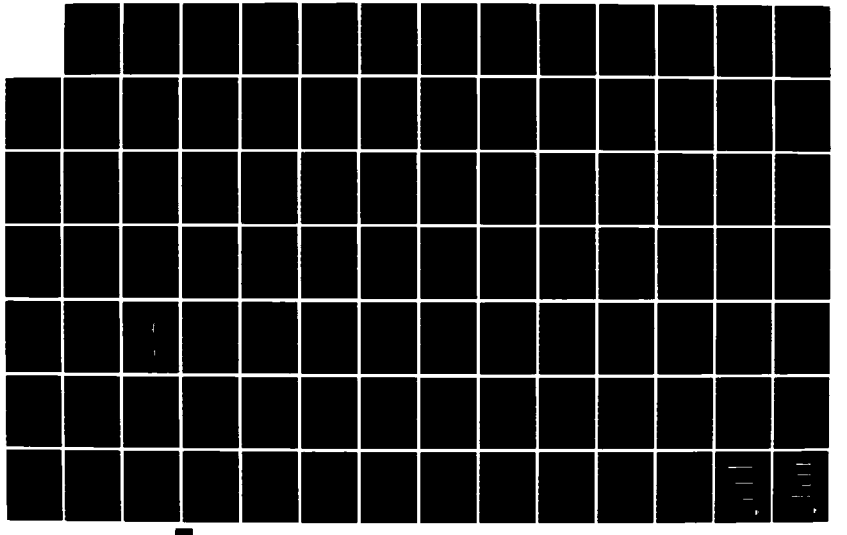

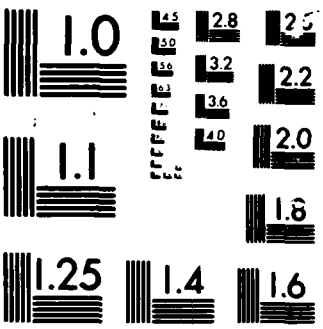

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join spouse studies, it would assure consistent join spouse consideration for all couples. Since the spouse can only be considered for a concurrent reassignment if the Air Force can identify the spouse by his or her SSAN, having this information correct in the UAR is important.

The second recommendation would be to perform the same kind of study for Air Force officers. The data manipulation programs would only have to modified slightly in order to accomplish this. The only problem with conducting this study is that there is not as many officer join spouse couples as there are enlisted couples and the matrix of couples is very sparse for couples above the rank of major.

A third area of research would be to determine the cause for those lengths of separation (LOS) that were in excess of the mean plus three standard deviations. This study eliminated all those couples in which one or both of the members specified on their form 1048 that they did not desire join spouse assignment consideration. However, there were 79 couples who experienced a LOS greater than 24 months and 2 of these separations were for 52 months. These 79 couples with long LOSs represented only 0.8 percent of all separations, but for these couples it could possibly been a very difficult time. Perhaps a survey could be prepared and sent to the couples who experienced the excessive LOSs. The surveys would have to be sent to the couples through the Air Force Human Resourses Laboratory, San Antonio, Texas, since the identities and the SSANs of the individuals was not released

for the purpose of this research effort.

A final area of recommended research would be to solve a dilemma raised by this study. In the results chapter, it was noted that there was a difference between the mean LOSs for those who had dependents and those who did not. However, no conclusions were arrived at to explain this difference. Further research could be performed which might shed light on the reason for this difference.

Appendix A

```
      program stats
C
C   This program reads the data base file (DB) of join spouse
C      couples and develops statistics from this data
C
C     INPUT:
C                   id  = pseudo code nbr          9 digits
C                 spid  = pseudo code spouse       9 digits
C                 rank  = grade                    1 digits
C                 AFSC  = AFSC (1st 2 digits)      2 digits
C               intent  = assignment intent.       1 digits
C                 depa  = number of dependents     2 digits
C                 sex   = sex                      1 digits
C                  yy   = year arrived duty loc    2 digits
C                  mm   =  month arrived duty loc  2 digits
C                  dd   = day arrived duty loc     2 digits
C                  loc  = duty location            4 digits
C                 flag  = flag                     1 digits
C
C     OUTPUT:
C              Mal = number of males in the data base
C              Fem = number of females in the data base
C              MDEP = number of males with dependents
C              FDEP = number of females with dependents
C              T = number of individuals that want to be assigned with
C                        their spouse
C              A = number of individuals that don't want to be assigned
C                        with their spouse
C              MAFSCM( X ) = NUMBER OF MEN IN AFSC X
C              MAFSCF( X ) = NUMBER OF WOMEN IN AFSC X
C          VARIABLE NAME        RANK          VARIABLE NAME
C           FEMALES                               MALES
C
C              F(1)              E-1               M(1)
C              F(2)              E-2               M(2)
C              F(3)              E-3               M(3)
C              F(4)              E-4               M(4)
C              F(5)              E-5               M(5)
C              F(6)              E-6               M(6)
C              F(7)              E-7               M(7)
C              F(8)              E-8               M(8)
C              F(9)              E-9               M(9)
C
C
      INTEGER FDep,F(9),T, A,FEM,Depa,M(9),AFSC
      INTEGER   MAFSCF(100),MAFSCM(100),id,spid,rank,yy,mm,dd,flag
      CHARACTER sex,intent
      character*4 loc
      DATA  MDep,FDep, T, A, MAL, FEM /6*0/
      OPEN (8, FILE = 'db.dat', STATUS = 'OLD')
```

```
      OPEN (9, FILE = 'stats.out', STATUS = 'NEW')
      write (*,*) 'Please inset the number of records in DB'
      read(*,15) n
      DO 50 J = 1,9
        M(J) = 0
        F(J) = 0
   50 CONTINUE
      DO 60 L = 10,99
        MAFSCM(L) = 0
        MAFSCF(L) = 0
   60 CONTINUE
      do 99 k = 1,n
   10 READ (8,1)Id,Spid,Rank,AFSC,Intent, Deps, sex, yy, mm,
     + dd,loc, flag
    1 FORMAT (I9,I9,I1,I2,A1,I2,A1,I2,I2,I2,A4,A1)
C
C     check to see if assignment intention is = H, i.e.
C     couple does not desire join spouse assignment consideration.
      IF (Intent .EQ. 'H') THEN
         A = A + 1
       ELSE
         T = T + 1
      ENDIF
C
C     count males, males with deps if sex = m,
C       and increment appropriate male rank counter
      IF (SEX .EQ. 'M') THEN
         MAL = MAL + 1
         IF (Deps . GT. 0 ) THEN
             MDep = MDep + 1
         ENDIF
         J = Rank
         M(J) = M(J) + 1
         AFSC = AFSC
         MAFSCM(AFSC) = MAFSCM(AFSC) + 1
      ELSE
C     count females, females with dependents if sex <> m,
C      and increment appropriate female rank counter
         FEM = FEM+1
         IF (Deps .GT. 0 ) THEN
             FDep = FDep + 1
          ENDIF
         J = Rank
         F(J) = F(J) + 1
         MAFSCF(AFSC) = MAFSCF(AFSC) + 1
      ENDIF
   99 continue
      write (9,11)
      write (9,2) mal,fem
    2 format (1x,'There are ',i6,' males and ',i6,' females.')
      write (9,3) mdep,fdep
    3 format (1x,'There are ',i6,' males with dependents and',
     +/,'  there are', i6,' females with dependents')
```

```
      write (9,4)
 4    format (1x,/,' THE RANK DISTRIBUTION OF WOMEN AND MEN IS ',
     + 'AS FOLLOWS:')
      do 100 j = 1, 9
        write (9,5) j, f(j), m(j)
 5      format (1x, /,'In the rank E-',I1,' there are ',i6,' women ',
     + 'and', i6,' men')
 100  continue
      write (9,7) t,a
 7    format(1x,/,' There are ',i6,' persons who want to be assigned',
     +' with their spouse, and ',/, i6,' who did not request join ',
     + 'spouse assignment consideration.')
      do 200 k = 10,99
        write (9,6) k, nafscm(k), nafscf(k)
 6      format (1x,'In AFSC ',I2,' there are ',I6,' men and ',
     + I6,' women')
 11   format (1x, 'STATISTICS FROM THE DATA BASE (DB)',/)
 15   format (I6)
 200  continue
      end
```

```
      program delh
c     This program reduces the data base (DB) file. It eliminates all
c     those records which have an 'H' in the assignment intention
c     field.  This intention codes indicates that the couple does
c     not wish to be assigned together.
c
c     Input
c        data base file (DB)
c             field    title    description                type/length
c               1       id      member's pseudo code         I9
c               2       spid    spouce's pseudo code         I9
c               3       rank    rank                         I1
c               4       AFSC    AFSC (1st 2 digits)          I2
c               5       intent  assignment intention         A1
c               6       deps    number of dependents         I2
c               7       sex     sex                          A1
c               8       yy      year arrived duty loc.       I2
c               9       mm      month arrived duty loc.      I2
c               10      dd      day arrived duty loc.        I2
c               11      loc     duty location                A4
c               12      flag    flag                         A1
c
c
c     Output:
c        DB file marked and reduced to those who desire join spouse
c        assignment consideration.
c
c        DATA BASE FILE (DBR)
c             field   title     description                type/length
c               1       id      member's pseudo code         I9
c               2       spid    spouce's pseudo code         I9
c               3       rank    rank                         I1
c               4       AFSC    AFSC (1st 2 digits)          I2
c               5       intent  assignment intention         A1
c               6       deps    number of dependents         I2
c               7       sex     sex                          A1
c               8       yy      year arrived duty loc.       I2
c               9       mm      month arrived duty loc.      I2
c               10      dd      day arrived duty loc.        I2
c               11      loc     duty location                A4
c               12      flag    flag                         A1
c        statistics on number of those in DB who wish to be assigned
c        together and those who don't.
c
c     Variables:
c        h = the number that don't wish to be assigned together
c        n = the number that do wish to be assigned with their spouce
c
c
      integer h ,id,spid,rank,AFSC,deps,yy,mm,dd
      character intent,sex,flag
      character*4 loc
```

```
      open (8, file = 'db.dat', status = 'OLD')
      open (11, file = 'dbr.dat', status = 'NEW')
      open (10, file = 'delh.out', status = 'NEW')
      write (*,*) 'Please insert the number of records in DB.'
      read (*,30) L
      i = 1
      j = 1
      h = 0
100   if (i .gt. L) then
         goto 1000
       else
         read (8,20) id,spid,rank,AFSC,intent,deps,sex,yy,mm,dd,
     +      loc,flag
         if (intent .eq. 'H') then
            h = h + 1
            i = i + 1
            write (10,20)id,spid,rank,AFSC ,intent,deps,sex,
     +      yy,mm,dd,loc,flag
            goto 100
          else
            write (11,20)id,spid,rank,AFSC ,intent,deps,sex,
     +      yy,mm,dd,loc,flag
            n = n + 1
            j = j + 1
            i = i + 1
            goto 100
         endif
      endif
1000  continue
      write (10,40) n
      write (10,50) h
20    format (I9,I9,I1,I2,A1,I2,A1,I2,I2,I2,A4,A1)
30    format (I5)
40    FORMAT (1X,'There are ',I5,' recs in the data base (DBR) file',
     +' which represent',/,
     +' records that have not yet been matched.')
50              FORMAT (1X,'There are ',I5,' records in the data base (DB) file',
     +' which represent',/,
     +' records that have already been matched ,',
     +/,' and these have been deleted')
      stop
      end
```

```
program match
c     This program takes data from the data base file (DB) and matches
c     records of each husband and wife in the data base.  The record of
c     unmatched persons are marked to indicate that no match has been
c     found.  After each match is made subroutine write is called
c     which creates the records in the working data (WD) file.
c
c     INPUT:
c        data base file (DB)
c             field        title                        type/length
c               1          member's pseudo code           I9
c               2          spouce's pseudo code           I9
c               3          rank                           I1
c               4          AFSC (1st 2 digits)            I2
c               5          assignment intention           A1
c               6          number of dependents           I2
c               7          sex                            A1
c               8          year arrived duty loc.         I2
c               9          month arrived duty loc.        I2
c               10         day arrived duty loc.          I2
c               11         duty location                  A4
c               12         flag                           A1
c
c     OUTPUT:
c         working data file (WD)
c             field        title                        type/length
c               1          members pseudo code            I9
c               2          AFSC (1st 2 digits)            I2
c               3          rank                           I1
c               4          duty location                  A4
c               5          year arrived duty loc.         I2
c               6          month arrived duty loc.        I2
c               7          status of dependents           I1
c               8          length of seperation (LOS)     I2
c               9          flag (0,1,2)                   I1
c               10         move indicator (0,1)           I1
c               11         update indicator               I1
c               12         spouse's pseudo code           I9
c
c
c  VARIABLES:
c       last = number of  records in DB
c       k = next available record in WD
c       nn = number of records that are no-matches in DB
c       a = number of records left unmatched in DB
c
c
c
        program match
        integer DB(20000,36), WD(20000,35)
        integer a,uplim, lowlim
```

```
      open (unit = 8, file = 'dbr.dat', status = 'old')
      open (unit = 9, file = 'wd.dat', status = 'new')
      open (10, file = 'nomatch.out',status = 'new')
      open (unit = 11, file = 'mat.out', status = 'new')
      k = 1
      i = 1
  1   read (8,10,end= 99) DB(i,1), DB(i,2), DB(i,3), DB(i,4),
     +DB(i,5), DB(i,6), DB(i,7), DB(i,8), DB(i,9), DB(i,10),
     +DB(i,11), DB(i,12)
      i = i + 1
      goto 1
 99   continue
      last = i
      a = last
      i = 1
 50   If (i .eq. last) then
        go to 1000
       else
 55      If (DB(i,7) .eq. 'M') then
          lowlim = 1
          uplim = last
          j = (uplim + lowlim)/2
 60        icheck = uplim - lowlim
           If ( abs(uplim - lowlim) .eq. 1) then
             nm = nm +1
             i = i +1
             write (10,10) (db(i,n), n= 1,12)
             go to 50
            else
 70           If (DB(i,2) .eq. DB (j,1)) then
c     Create the WD records for records i,j
 200              if (DB(j,7) .eq. 'F') then
                    WD (k,1 ) = DB(i,1 )
                    WD (k,2 ) = DB(i,4 )
                    WD (k,3 ) = DB(i,3 )
                    WD (k,4 ) = DB(i,11)
                    WD (k,5 ) = DB(i,8 )
                    WD (k,6 ) = DB(i,9 )
                    WD (k,8 ) = 0
                    WD (k,9 ) = 0
                    WD (k,10) = 0
                    WD (k,11) = 0
                    WD (k,12) = DB(i,2)
                    if (DB (i,6) .gt. 0 ) then
                       WD (k,7 ) = 1
                     else
                       WD (k,7 ) = 0
                    endif
                    WD (k + 1,1 ) = DB(j,1 )
                    WD (k + 1,2 ) = DB(j,4 )
                    WD (k + 1,3 ) = DB(j,3 )
                    WD (k + 1,4 ) = DB(j,11)
                    WD (k + 1,5 ) = DB(j,8 )
```

```
                    WD (k + 1,6 ) = DB(j,9 )
                    WD (k + 1,8 ) = 0
                    WD (k + 1,9 ) = 0
                    WD (k + 1,10) = 0
                    WD (k + 1,11) = 0
                    WD (k + 1,12) = DB(j,2)
                    if (DB(j,6) .gt. 0)then
                        WD (k + 1, 7) = 1
                     else
                        WD (k + 1, 7) = 0
                    endif
c                   Flag data base as matched
                    DB(i,12) = 'M'
                    DB(j,12) = 'M'
                    write (9,810) (WD(k,n), n= 1,12)
                    write (9,810) (WD(k+1,n), n = 1,12)
                    a = a - 2
                    k = k + 2
                    i = i + 1
                    goto 50
                  else
c                   Codes match but not a male - female pair
                    DB(i,12) = '?'
                    DB (j,12) = '?'
                    i = i + 1
                    goto 50
                  endif
                else
                  if (DB(i,2) .gt. DB(j,1)) then
                     lowlim = j
                     j = (uplim + lowlim)/2
                     goto 60
                  endif
                  if (DB(i,2) .lt. DB (j,1)) then
                     uplim = j
                     j = (uplim + lowlim)/2
                     goto 60
                  endif
                endif
              endif
            else
               i = i + 1
               goto 50
            endif
        endif
1000 continue
     rewind 8
     do 1100 i = 1,last
       write (8,10) db(i,1),db(i,2),db(i,3),db(i,4),Db(i,5),db(i,6),
    +  db(i,7),db(i,8),db(i,9),db(i,10),db(i,11),db(i,12)
1100 continue
     write (11,820) last,nn,k
10   format (I9,I9,I1,I2,A1,I2,A1,I2,I2,I2,A4,A1)
```

```
810  format (I9,I2,I1,A4,I2,I2,I1,I2,I1,I1,I1,I9)
820  format (1x, 'There are ', i6, 'records in the file DBR.',
     +' There are', i5,/, ' sale records in DB that were '
     +'not matched.  There are ', i6, 'records in WDfile')
       stop
      end
```

```
      program losepn
c     This program calculates the length of separation (LOS) an
c     Air Force enlisted couple experiences when one is selected for
c     transfer.  This information is calculated from data found in the
c     working data file (WD).  This program is run after the file has
c     been updated (programs updat, delete, match and add have all
c     been run).  This program fills in the fields:
c              losep      Length of separation
c              WD(i,9)    Seperation indicator (0,1,2)
c
c     Input:
c
c         working data file (WD)
c             field   title      description              type/length
c               1       id       members pseudo code          I9
c               2       AFSC     AFSC (1st 2 digits)          I2
c               3       rank     rank                         I1
c               4       loc      duty location                A4
c               5       yy       year arrived duty loc.       I2
c               6       mm       month arrived duty loc.      I2
c               7       dd       status of dependents         I1
c               8       los      length of separation (LOS)   I2
c               9       flag     flag (0,1,2)                 I1
c               10      move     move indicator (0,1)         I1
c               11      updat    update indicator (0,1)       I1
c               12      spid     spouse's pseudo code         I9

c
c     Output:
c        WD file updated
c
c     Subroutines:
c        This program calls subroutine LOCATE which checks to see if
c        a couple is in a co-located zone.
c
c
c     Variables:
c           c = number of complete couples
c           ms = number of couples that both moved(seperated last year)
c           s = number of stationary couples
c           mt = number of couples that both moved (together last year)
c           p = number of couples where one moved away and returned
c           o = number of couples where only one moved
c           code1 = number of couples in co-located zone
c
       program losepn
       integer c,s,o,p,Len, code, code1
       integer a1,b1,zone(212)
       integer id(20000),afsc(20000),rank(20000),yy(20000),mm(20000)
       integer deps(20000),los(20000),flag(20000),move(20000)
       integer updat(20000),spid(20000)
       character*4 a,b, loc(20000)
```

```
      character*4 loca(212)
      open (8, file = 'wd.dat', status = 'OLD')
      open (9 ,file = 'locat.dat', status = 'old')
      open (10, file = 'losn.out', status = 'NEW')
      open (11, file = 'wdrn.dat', status = 'new')
      rewind 8
      rewind 9
      rewind 10
      rewind 11
      mt = 0
      s = 0
      ms = 0
      o = 0
      p = 0
      c = 0
      Len = 0
       code1 = 0
       i = 1
1     read (8,10,end = 99) Id(i),Afac(i),Rank(i),Loc(i),Yy(i),
     +Mn(i),Depe(i),Los(i), Flag(i),Move(i),Updat(i),spid(i)
      i = i + 1
      go to 1
99    continue
      last = i -1
      i = 1
      do 510 i = 1,212
      read (9,105) loca(i),zone(i)
510   continue
      i = 1
100   if (i .le. last) then
         code = 0
         if (Id(i) .ne. Spid(i+1)) then
            updat(i) = 9
            i = i + 1
            go to 100
         endif
         if (Loc(i) .ne. Loc(i+1)) then
           a = loc(i)
           b = loc(i+1)
           mi =1
305        if (mi .le. 212) then
             if (a .eq. loca(mi)) then
              a1 = zone (mi)
              j = 1
205           if (j .le. 212) then
                if (b .eq. loca(j))then
                   b1 = zone(j)
                   if (a1 .eq. b1) then
                      code = 1
                      goto 1005
                   else
                      if (a1 .eq. 17) then
                         if (a .eq. 'NHKK') then
```

```
                  if (b .eq. 'NXZA' .or. b .eq. 'NXYZ' .or.
     +                b .eq. 'NYAE' .or. b .eq. 'JBYZ' .or.
     +                b .eq. 'GRBQ' .or. b .eq. 'UDHY' .or.
     +                b .eq.  'YXUR' .or. b .eq. 'YYBA') then
                     code = 1
                     goto 1005
                   else
                     code = 4
                     goto 1005
                  endif
                endif
                 if (a .eq. 'YXUR') then
                  if (b .eq. 'YYBA' .or. b .eq. 'VBHZ' .or.
     +                b .eq. 'NYAE' .or. b .eq. 'JBYZ' .or.
     +                b .eq. 'NHKK' .or. b .eq. 'UDHY' .or.
     +                b .eq.  'YYBA') then
                     code = 1
                     goto 1005
                   else
                     code = 4
                     goto 1005
                  endif
                 endif
                 if (a .eq. 'JBYZ') then
                  if (b .eq. 'YXUR' .or. b .eq. 'YYBA' .or.
     +                b .eq. 'NHKK' .or. b .eq. 'NXYZ' .or.
     +                b .eq. 'NXZA' .or. b .eq. 'GRBQ') then
                     code = 1
                     goto 1005
                   else
                     code = 4
                     goto 1005
                  endif
                 endif
                 if (a .eq. 'YYBA') then
                  if (b .eq. 'JBYZ' .or. b .eq. 'YXUR' .or.
     +                b .eq. 'NYAE' .or. b .eq. 'VBHZ' .or.
     +                b .eq. 'NHKK' .or. b .eq. 'UDHY') then
                     code = 1
                     goto 1005
                   else
                     code = 4
                     goto 1005
                  endif
                 endif
                 if (a .eq. 'NYAE') then
                  if (b .eq. 'JBYZ' .or. b .eq. 'YXUR' .or.
     +                b .eq. 'YYBA' .or. b .eq. 'NHKK' .or.
     +                b .eq. 'NXYZ' .or. b .eq. 'NXZA' .or.
     +                b .eq.  'GRBQ') then
                     code = 1
                     goto 1005
                   else
```

```
                code = 4
                goto 1005
             endif
          endif
        else
          code = 4
          goto 1005
       endif
       if (a1 .eq. 7) then
          if (a .eq. 'UDHY') then
             if (b .eq. 'NHKK' .or. b .eq. 'YXUR' .or.
     +          b .eq. 'FAWH' .or. b .eq. 'YYBA') then
                code = 1
                goto 1005
             else
                code = 4
                goto 1005
             endif
          endif
          if (a .eq. 'FAWH') then
             if (b .eq. 'UDHY') then
                code = 1
                goto 1005
             else
                code = 4
                goto 1005
             endif
          endif
        else
          code = 4
          goto 1005
       endif
       if (a1 .eq. 19) then
          if (a .eq. 'YXUR') then
             if (b .eq. 'JBYZ' .or. b .eq. 'NYAE' .or.
     +           b .eq. 'YYBA' .or. b .eq. 'NHKK' .or.
     +           b .eq. 'VBHZ' .or. b .eq. 'UDHY') then
                code = 1
                goto 1005
             else
                code = 4
                goto 1005
             endif
          endif
          if (a .eq. 'YYBA') then
             if (b .eq. 'JBYZ' .or. b .eq. 'NYAE' .or.
     +           b .eq. 'NHKK' .or. b .eq. 'YXUR' .or.
     +           b .eq. 'UDHY' .or. b .eq. 'VBHZ') then
                code = 1
                goto 1005
             else
                code = 4
                goto 1005
```

```
                              endif
                            endif
                          else
                            code = 4
                            goto 1005
                          endif
                          if (a1 .eq. 20) then
                            if (a .eq. 'JBYZ') then
                              if (b .eq. 'NYAE' .or. b .eq. 'YYBA' .or.
     +                            b .eq. 'NXYZ' .or. b .eq. 'YXUR' .or.
     +                            b .eq. 'NHKK' .or. b .eq. 'NXZA' .or.
     +                            b .eq. 'GRBQ') then
                                code = 1
                                goto 1005
                              else
                                code = 4
                                goto 1005
                              endif
                            endif
                          else
                            code = 4
                            goto 1005
                          endif
                        endif
                      else
                        j = j + 1
                        goto 205
                      endif
                    else
                      code = 3
                      go to 1005
                    endif
                  else
                    ni = ni + 1
                    goto 305
                  endif
                else
                  code = 2
                  goto 1005
                endif
1005            continue
              endif
              if (code .eq. 1) then
                code1 = code1 + 1
              endif
              Len =  Los(i)
 50           if (Los(i) .gt. 0 ) then
c           couple was seperated last year
 60             if (Flag(i) .eq. 2) then
c           record is complete
                  i = i + 2
                  c = c + 1
                  goto 100
```

```
            else
 70          if (Move(i) .eq. 1 .and. Move(i+1) .eq. 1)then
c     both moved and they were previously seperated
 80             if (Loc(i) .eq. Loc(i+1) .or. code .eq. 1) then
c     moved to the same place
 90                if (Yy(i+1) .gt. Yy(i)) then
c     he moved first
                     Len = Ma(i+1) + Len
                     goto 1000
                   endif
                  if (Yy(i) .gt. Yy(i+1)) then
c     she moved first
                     Len = Ma(i) + Len
                     goto 1000
                  endif
                  if (Ma(i+1) .gt. Ma(i)) then
c     he moved first
                     Len = Ma(i+1) + Len
                     goto 1000
                   endif
                  if (Ma(i) .gt. Ma(i+1)) then
c     she moved first
                     Len = Ma(i) + Len
                     goto 1000
                  endif
                  if (Yy(i) .eq. Yy(i+1).and. Ma(i) .eq.
     +            Ma(i+1)) then
c     they moved simultaneously
                     Len = Ma(i) + Len
                     goto 1000
                  endif
400              else
c     they moved to different locations
                  Len = Len  + 12
                  los(i) = len
                  los(i+1) = Len
                  i = i +2
                  goto 100
                endif
              else
 110            if (Loc(i) .eq. Loc(i+1) .or. code .eq. 1) then
c     one moved away and returned
                 p = p + 1
 120               if (Move(i) .eq. 1) then
c     he moved
                     Len = Len + Ma(i)
410                else
c     she moved
                     Len = Len + Ma(i+1)
                  endif
                  goto 1000
420              else
c     first person moves a second time but is not re-united with spouce
```

```
                    Len = Len + 12
                    los(i) = Len
                    los(i+1) = Len
                    i = i + 2
                    goto 100
                  endif
                endif
              endif
             else
 200          if (Move(i) .eq. 0 .and. Move(i+1) .eq. 0) then
c      couple remained together and didn't move
C THE NEXT 24 RECORDS MUST BE CHANGED EACH YEAR
                if (code .gt. 1) then
                  if (yy(i) .eq.83) then
                    if (yy(i+1) .eq.83) then
                      if (mm(i+1) .gt. mm(i)) then
                        move(i) = 1
                        goto 200
                       else
                        move(i+1) = 1
                        goto 200
                      endif
                     else
                      move(i) = 1
                      goto 200
                    endif
                  else
                    if (yy(i+1) .eq. 83) then
                      move(i+1) = 1
                      goto 200
                    endif
                  endif
                endif
                s = s + 1
                i = i + 2
                goto 100
440            else
c      one or both moved this year for the first time
210             if (Move(i) .eq. 1 .and. Move(i+1) .eq. 1) then
c      both moved this year
220               if (Loc(i) .eq. Loc(i+1) .or. code .eq. 1) then
c      both moved to the same place
                    mt = mt + 1
                    Len = Len + ABS(Mm(i+1) - Mm(i))
 230                if (Len .eq. 0) then
                      i = i + 2
                      goto 100
                    endif
                    goto 1000
450                 else
c      both moved but to different locations
                    flag(i) = 1
                    flag(i+1) = 1
```

```
240                   if (Ma(i) .gt. Ma(i+1)) then
c     she moved first
                        Len = Len + (12-Ma(i+1))
                      else
c     he moved first
                        Len = Len + (12-Ma(i))
                     endif
                     los(i) = Len
                     los(i+1) = Len
                     i = i + 2
                     goto 100
                   endif
                  else
250                if (Move(i) .eq. 1) then
                     s = s + 1
c     he moved this year she did not
                     Len = Len + (12- Ma(i))
                   else
c     she moved this year he did not
                     Len = Len + (12- Ma(i+1))
                   endif
                   flag(i) = 1
                   flag(i+1) = 1
                   los(i) = Len
                   los(i+1) = Len
                   i = i + 2
                   goto 100
                 endif
               endif
             endif
           else
             goto 1100
           endif
           goto 1100
 1000      flag(i) = 2
           flag(i+1) = 2
           los(i) = Len
           los(i+1) = Len
           i = i + 2
           goto 100
 1100      continue
           do 1110 I = 1,last
              write (11,10) id(I),afsc(i), rank(i), loc(i), yy(i),
          +   ma(i),deps(i),los(i),flag(i),move(i),updat(i),apid(i)
 1110      continue
           write (10,340) O
           write (10,350) MS
           write (10,360) C
           write (10,370) P
           write (10,380) MT
           write (10,390) S
           write (10,391) code1
 10        format (I9,I2,I1,A4,I2,I2,I1,I2,I1,I1,I1,I9)
```

```
30   format (i5)
105  format (e4,i2)
 340   FORMAT (1X,'There are ',I5,' couples in the (WDR) file',
    +' where only',/,' one of the members moved this year.')
350   FORMAT (1X,'There are ',I5,' couples in the (WDR) file who',
    +' were',/,' seperated last year and they both moved this year.')
360   FORMAT (1X,'There are ',I5,' couples in the (WDR) file',
    +' whose record',/,' is complete, ie they are re-united.')
380   FORMAT (1X,'There are ',I5,' couples in the (WDR) file',
    +' who were',/,' together last year and both moved this year.')
370   FORMAT (1X,'There are ',I5,' couples in the (WDR) file who',
    +' were ',/,' seperated last year and one moved back this year.')
390   FORMAT (1X,'There are ',I5,' couples in the (WDR) file',
    +' who did not',/,' move at all yet.')
391   FORMAT (1X,'There are ',I5,' couples in the (WDR) file',
    +' who were in',/,' co-located zones.')
      stop
      end
```

```
      program losep
c     This program calculates the length of separation (LOS) an
c     Air Force enlisted couple experiences when one is selected for
c     transfer.  This information is calculated from data found in the
c     working data file (WD).  This program is run after the file has
c     been updated (programs updat, delete, match and add have all
c     been run).  This program fills in the fields:
c              losep      Length of separation
c              WD(i,9)    Seperation indicator (0,1,2)
c
c     Input:
c
c         working data file (WD)
c             field   title      description              type/length
c               1       id       members pseudo code          I9
c               2       AFSC     AFSC (1st 2 digits)          I2
c               3       rank     rank                         I1
c               4       loc      duty location                A4
c               5       yy       year arrived duty loc.       I2
c               6       mm       month arrived duty loc.      I2
c               7       dd       status of dependents         I1
c               8       los      length of separation (LOS)   I2
c               9       flag     flag (0,1,2)                 I1
c               10      move     move indicator (0,1)         I1
c               11      updat    update indicator (0,1)       I1
c               12      spid     spouse's pseudo code         I9

c
c     Output:
c        WD file updated
c
c     Subroutines:
c        This program calls subroutine LOCATE which checks to see if
c        a couple is in a co-located zone.
c
c
c     Variables:
c           c = number of complete couples
c           ms = number of couples that both moved(seperated last year)
c           s = number of stationary couples
c           mt = number of couples that both moved (together last year)
c           p = number of couples where one moved away and returned
c           o = number of couples where only one moved
c           code1 = number of couples in co-located zone
c
         program losep
      integer c,s,o,p,Len, code, code1
      integer a1,b1,zone(212)
      integer id(40000),afsc(40000),rank(40000),yy(40000),mm(40000)
      integer deps(40000),los(40000),flag(40000),move(40000)
      integer updat(40000),spid(40000)
      character*4 a,b, loc(40000)
```

```
      character*4 loca(212)
      open (8, file = 'wd.dat', status = 'OLD')
      open (9 ,file = 'locat.dat', status = 'old')
      open (10, file = 'los.out', status = 'NEW')
      open (11, file = 'wdrn.dat', status = 'new')
      rewind 8
      rewind 9
      rewind 10
      rewind 11
      nt = 0
      s = 0
      ns = 0
      o = 0
      p = 0
      c = 0
      Len = 0
       code1 = 0
      write (*,*)' Please insert the number of records in wd.dat'
      read(*,30) last
      do 99 j = 1,last
1     read (8,10) Id(j),Afsc(j),Rank(j),Loc(j),Yy(j),
     +Mn(j),Deps(j),Los(j), Flag(j),Move(j),Updat(j),spid(j)
99    continue
      do 510 i = 1,212
      read (9,105) loca(i),zone(i)
510   continue
      i = 1
100   if (i .le. last) then
         code = 0
         if (Id(i) .ne. Spid(i+1)) then
            updat(i) = 9
            i = i + 1
            go to 100
         endif
         if (Loc(i) .ne. Loc(i+1)) then
           a = loc(i)
           b = loc(i+1)
           ni =1
305        if (ni .le. 212) then
             if (a .eq. loca(ni)) then
              a1 = zone (ni)
              j = 1
205           if (j .le. 212) then
                if (b .eq. loca(j))then
                   b1 = zone(j)
                   if (a1 .eq. b1) then
                      code = 1
                      goto 1005
                     else
                      if (a1 .eq. 17) then
                         if (a .eq. 'NHKK') then
                            if (b .eq. 'NXZA' .or. b .eq. 'NXYZ' .or.
     +                          b .eq. 'NYAE' .or. b .eq. 'JBYZ' .or.
```

```
     +                    b .eq. 'GRBQ' .or. b .eq. 'UDHY' .or.
     +                    b .eq.  'YXUR' .or. b .eq. 'YYBA') then
                         code = 1
                         goto 1005
                        else
                         code = 4
                         goto 1005
                       endif
                      endif
                      if (a .eq. 'YXUR') then
                       if (b .eq. 'YYBA' .or. b .eq. 'VBHZ' .or.
     +                    b .eq. 'NYAE' .or. b .eq. 'JBYZ' .or.
     +                    b .eq. 'NHKK' .or. b .eq. 'UDHY' .or.
     +                    b .eq.  'YYBA') then
                         code = 1
                         goto 1005
                        else
                         code = 4
                         goto 1005
                       endif
                      endif
                      if (a .eq. 'JBYZ') then
                       if (b .eq. 'YXUR' .or. b .eq. 'YYBA' .or.
     +                    b .eq. 'NHKK' .or. b .eq. 'NXYZ' .or.
     +                    b .eq. 'NXZA' .or. b .eq. 'GRBQ') then
                         code = 1
                         goto 1005
                        else
                         code = 4
                         goto 1005
                       endif
                      endif
                      if (a .eq. 'YYBA') then
                       if (b .eq. 'JBYZ' .or. b .eq. 'YXUR' .or.
     +                    b .eq. 'NYAE' .or. b .eq. 'VBHZ' .or.
     +                    b .eq. 'NHKK' .or. b .eq. 'UDHY') then
                         code = 1
                         goto 1005
                        else
                         code = 4
                         goto 1005
                       endif
                      endif
                      if (a .eq. 'NYAE') then
                       if (b .eq. 'JBYZ' .or. b .eq. 'YXUR' .or.
     +                    b .eq. 'YYBA' .or. b .eq. 'NHKK' .or.
     +                    b .eq. 'NXYZ' .or. b .eq. 'NXZA' .or.
     +                    b .eq.  'GRBQ') then
                         code = 1
                         goto 1005
                        else
                         code = 4
                         goto 1005
```

```
            endif
          endif
        else
          code = 4
          goto 1005
        endif
        if (a1 .eq. 7) then
          if (a .eq. 'UDHY') then
            if (b .eq. 'NHKK' .or. b .eq. 'YXUR' .or.
     +          b .eq. 'FAWH' .or. b .eq. 'YYBA') then
              code = 1
              goto 1005
            else
              code = 4
              goto 1005
            endif
          endif
          if (a .eq. 'FAWH') then
            if (b .eq. 'UDHY') then
              code = 1
              goto 1005
            else
              code = 4
              goto 1005
            endif
          endif
        else
          code = 4
          goto 1005
        endif
        if (a1 .eq. 19) then
          if (a .eq. 'YXUR') then
            if (b .eq. 'JBYZ' .or. b .eq. 'NYAE' .or.
     +          b .eq. 'YYBA' .or. b .eq. 'NHKK' .or.
     +          b .eq. 'VBHZ' .or. b .eq. 'UDHY') then
              code = 1
              goto 1005
            else
              code = 4
              goto 1005
            endif
          endif
          if (a .eq. 'YYBA') then
            if (b .eq. 'JBYZ' .or. b .eq. 'NYAE' .or.
     +          b .eq. 'NHKK' .or. b .eq. 'YXUR' .or.
     +          b .eq. 'UDHY' .or. b .eq. 'VBHZ') then
              code = 1
              goto 1005
            else
              code = 4
              goto 1005
            endif
          endif
```

```
                        else
                          code = 4
                          goto 1005
                        endif
                        if (a1 .eq. 20) then
                          if (a .eq. 'JBYZ') then
                            if (b .eq. 'NYAE' .or. b .eq. 'YYBA' .or.
     +                          b .eq. 'NXYZ' .or. b .eq. 'YXUR' .or.
     +                          b .eq. 'NHKK' .or. b .eq. 'NXZA' .or.
     +                          b .eq. 'GRBQ') then
                              code = 1
                              goto 1005
                            else
                              code = 4
                              goto 1005
                            endif
                          endif
                        else
                          code = 4
                          goto 1005
                        endif
                      endif
                    else
                      j = j + 1
                      goto 205
                    endif
                  else
                    code = 3
                    go to 1005
                  endif
                else
                  ni = ni + 1
                  goto 305
                endif
              else
                code = 2
                goto 1005
              endif
1005          continue
            endif
            if (code .eq. 1) then
              code1 = code1 + 1
            endif
            Len =  Los(i)
 50         if (Los(i) .gt. 0 ) then
c       couple was seperated last year
 60           if (Flag(i) .eq. 2) then
c       record is complete
                i = i + 2
                c = c + 1
                goto 100
              else
 70             if (Move(i) .eq. 1 .and. Move(i+1) .eq. 1)then
```

```
c     both moved and they were previously seperated
 80               if (Loc(i) .eq. Loc(i+1) .or. code .eq. 1) then
c     moved to the same place
 90                  if (Yy(i+1) .gt. Yy(i)) then
c     he moved first
                        Len = Ma(i+1) + Len
                        goto 1000
                     endif
                     if (Yy(i) .gt. Yy(i+1)) then
c     she moved first
                        Len = Ma(i) + Len
                        goto 1000
                     endif
                     if (Ma(i+1) .gt. Ma(i)) then
c     he moved first
                        Len = Ma(i+1) + Len
                        goto 1000
                     endif
                     if (Ma(i) .gt. Ma(i+1)) then
c     she moved first
                        Len = Ma(i) + Len
                        goto 1000
                     endif
                     if (Yy(i) .eq. Yy(i+1).and. Ma(i) .eq.
     +               Ma(i+1)) then
c     they moved simultaneously
                        Len = Ma(i) + Len
                        goto 1000
                     endif
400                else
c     they moved to different locations
                     Len = Len  + 12
                     los(i) = len
                     los(i+1) = Len
                     i = i +2
                     goto 100
                   endif
                else
 110              if (Loc(i) .eq. Loc(i+1) .or. code .eq. 1) then
c     one moved away and returned
                    p = p + 1
 120                if (Move(i) .eq. 1) then
c     he moved
                      Len = Len + Ma(i)
410                  else
c     she moved
                      Len = Len + Ma(i+1)
                     endif
                     goto 1000
420                 else
c     first person moves a second time but is not re-united with spouce
                     Len = Len + 12
                     los(i) = Len
```

```
                    los(i+1) = Len
                    i = i + 2
                    goto 100
                  endif
                endif
              endif
             else
 200          if (Move(i) .eq. 0 .and. Move(i+1) .eq. 0) then
c      couple remained together and didn't move
C THE NEXT 24 RECORDS MUST BE CHANGED EACH YEAR
                if (code .gt. 1) then
                  if (yy(i) .eq. 81) then
                    if (yy(i+1) .eq. 81) then
                      if (mm(i+1) .gt. mm(i)) then
                        move(i+1) = 1
                        goto 200
                       else
                        move(i) = 1
                        goto 200
                      endif
                     else
                      move(i) = 1
                      goto 200
                    endif
                  else
                    if (yy(i+1) .eq.81) then
                      move(i+1) = 1
                      goto 200
                    endif
                  endif
                endif
                s = s + 1
                i = i + 2
                goto 100
440            else
c      one or both moved this year for the first time
210             if (Move(i) .eq. 1 .and. Move(i+1) .eq. 1) then
c      both moved this year
220               if (Loc(i) .eq. Loc(i+1) .or. code .eq. 1) then
c      both moved to the same place
                    mt = mt + 1
                    Len = Len + ABS(Mm(i+1) - Mm(i))
 230                if (Len .eq. 0) then
                      i = i + 2
                      goto 100
                    endif
                    goto 1000
450                else
c      both moved but to different locations
                    flag(i) = 1
                    flag(i+1) = 1
240                 if (Mm(i) .gt. Mm(i+1)) then
c      she moved first
```

```
                        Len = Len + (12-Mm(i+1))
                       else
c     he moved first
                        Len = Len + (12-Mm(i))
                      endif
                      los(i) = Len
                      los(i+1) = Len
                      i = i + 2
                      goto 100
                    endif
                   else
250                 if (Move(i) .eq. 1) then
                      a = a + 1
c     he moved this year she did not
                      Len = Len + (12- Mm(i))
                     else
c     she moved this year he did not
                      Len = Len + (12- Mm(i+1))
                    endif
                    flag(i) = 1
                    flag(i+1) = 1
                    los(i) = Len
                    los(i+1) = Len
                    i = i + 2
                    goto 100
                  endif
               endif
            endif
           else
            goto 1100
      endif
      goto 1100
 1000 flag(i) = 2
      flag(i+1) = 2
      los(i) = Len
      los(i+1) = Len
      i = i + 2
      goto 100
 1100 continue
      do 1110 I = 1,last
         write (11,10) id(I),efsc(i), rank(i), loc(i), yy(i),
     +   mm(i),depa(i),los(i),flag(i),move(i),updat(i),spid(i)
 1110 continue
      write (10,340) O
      write (10,350) MS
      write (10,360) C
      write (10,370) P
      write (10,380) MT
      write (10,390) S
      write (10,391) code1
 10   format (I9,I2,I1,A4,I2,I2,I1,I2,I1,I1,I1,I9)
 30   format (i5)
 105  format (a4,i2)
```

```
 340   FORMAT (1X,'There are ',I5,' couples in the (WDR) file',
     +' where only',/,' one of the members moved this year.')
 350   FORMAT (1X,'There are ',I5,' couples in the (WDR) file who',
     +' were',/,' seperated last year and they both moved this year.')
 360   FORMAT (1X,'There are ',I5,' couples in the (WDR) file',
     +' whose record',/,' is complete, ie they are re-united.')
 380   FORMAT (1X,'There are ',I5,' couples in the (WDR) file',
     +' who were',/,' together last year and both moved this year.')
 370   FORMAT (1X,'There are ',I5,' couples in the (WDR) file who',
     +' were ',/,' seperated last year and one moved back this year.')
 390   FORMAT (1X,'There are ',I5,' couples in the (WDR) file',
     +' who did not',/,' move at all yet.')
 391   FORMAT (1X,'There are ',I5,' couples in the (WDR) file',
     +' who were in',/,' co-located zones.')
       stop
       end
```

```
      program percent
c
c  This subroutine converts the first two digits of the 6 digit
c     air force specialty codes (afsc) for enlisted
c     personnel to percentages which reflect the ratio
c     of number of members with each two digit specialty code to the
c     entire enlisted force.  The program then creates the LOS file
c     which will be the input file for BMDP.
c   INPUT:
c     working data file (WD)
c        field       title                          type/length  name
c          1         member's pseudo code             I9         id
c          2         AFSC (1st 2 digits)              I2         afsc1
c          3         rank                             I1         rank
c          4         duty location                    A4         loc
c          5         year arrived duty location       I2         yy
c          6         month arrived duty location      I2         mm
c          7         status of dependents             I1         deps
c          8         length of separation             I2         los
c          9         separation flag (0,1,2)          I1         flag
c          10        move indicator                   I1         move
c          11        update indicator                 I1         updat
c          12        spouse's pseudo code             I9         spid
c  OUTPUT:
c     length of separation file (LOS)
c        field       description              type/length    name
c          1         length of separation          I2         lensep
c          2         rank male                     I1         mrank
c          3         rank female                   I1         frank
c          4         AFSC percentage (male)        f6.4       mper
c          5         AFSC percentage (female)      f6.4       fper
c          6         status of dependents          I1         depst
c          7         AFSC (1st 2 digits) male      I2         mafsc
c          8         AFSC (1st 2 digits) female    I2         fafsc
c
c   Variables:
c       last = the # of records to be translated
      integer F(51),id,afsc1,rank,yy,mm,deps,los,flag,move,
     + updat,spid, M(51),men(9),women(9)
      integer id2,afsc2,rank2,yy2,mm2,deps2,los2,
     + flag2,move2,updat2,spid2
      integer  lensep,mrank,frank,depst,mafsc,fafsc
      real afsc(51),mper,fper
      character*4 loc,loc2
      data M,F /51 * 0,51 * 0/
      open (unit = 10, file = 'wd.dat', status = 'old')
      open (unit = 11, file = 'percent.dat', status = 'old')
      open (unit = 12, file = 'los.dat', status = 'new')
      open (unit = 13, file = 'percent.out',status = 'new')
      open (unit = 14,file = 'junk.out',status = 'new')
      do  14 i = 1,51
      read (11,10) afsc(i)
14     continue
```

```
c
      write (*,*) 'Insert the number of records in the WD file.'
      read (*,20) Last
      i = 1
      j = 0
      do 99 L = 1,9
         men(L) = 0
         women(L) = 0
 99   continue
 155   if ( i .gt. Last ) then
         goto 1000
        else
         read (10,40)  id,afsc1,rank,loc,yy,mm,deps,los,flag,move,
     + updat,spid
         read (10,40)id2,afsc2,rank2,loc2,yy2,mm2,deps2,los2,
     + flag2,move2,updat2,spid2
         if (id .ne. spid2)then
           write (14,40) id,afsc1,rank,loc,yy,mm,deps,los,flag,
     +     move,updat,spid
           i = i + 1
           goto 155
         endif
         lensep = los
         mrank = rank
         frank = rank2
         depst = deps + deps2
         if (depst .eq. 2) then
           depst = 1
         endif
         mafsc = afsc1
         fafsc = afsc2
         n = rank
         k = rank2
         men(n) = Men(n) + 1
         women(k) = women(k) + 1
c     calculate AFSC percentages for male records
C  10 FIRST SERGEANT
         if(afsc1 .lt. 11) then
            mper = afsc(1)
            M(1) = M(1) + 1
            i = i + 1
            goto 100
C  11 AIRCREW OPERATIONS
         elseif(afsc1 .lt. 12) then
            mper = afsc(2)
            M(2) = M(2) + 1
            i = i + 1
            goto 100
C  12 AIRCREW PROTECTION
         elseif(afsc1 .lt. 13) then
            mper = afsc(3)
            M(3) = M(3) + 1
            i = i + 1
```

```
            goto 100
C  20 INTELLIGENCE
         elseif(afsc1 .lt. 21) then
            nper = afsc(4)
            N(4) = N(4) + 1
            i = i + 1
            goto 100
C  22 PHOTOMAPPING
         elseif(afsc1 .lt. 23) then
            nper = afsc(5)
            N(5) = N(5) + 1
            i = i + 1
            goto 100
C  23 AUDIOVISUAL
         elseif(afsc1 .lt. 24) then
            nper = afsc(6)
            N(6) = N(6) + 1
            i = i + 1
            goto 100
C  24 SAFTEY
         elseif(afsc1 .lt. 25) then
            nper = afsc(7)
            N(7) = N(7) + 1
            i = i + 1
            goto 100
C  25 WEATHER
         elseif(afsc1 .lt. 26) then
            nper = afsc(8)
            N(8) = N(8) + 1
            i = i + 1
            goto 100
C  27 COMMAND CONTROL SYSTEM OPERATIONS
         elseif(afsc1 .lt. 28) then
            nper = afsc(9)
            N(9) = N(9) + 1
            i = i + 1
            goto 100
C  29 COMMUNICATIONS OPERATIONS
         elseif(afsc1 .lt. 30) then
            nper = afsc(10)
            N(10) = N(10) + 1
            i = i + 1
            goto 100
C  30 COMMUNICATIONS OPERATIONS
         elseif(afsc1 .lt. 31) then
            nper = afsc(11)
            N(11) = N(11) + 1
            i = i + 1
            goto 100
C  31 MISSILE ELECTRONIC MAINTENANCE
         elseif(afsc1 .lt. 32) then
            nper = afsc(12)
            N(12) = N(12) + 1
```

```
            i = i + 1
            goto 100
C  32 AVIONICS SYSTEMS
         elseif(afsc1 .lt. 33) then
            nper = afsc(13)
            M(13) = M(13) + 1
            i = i + 1
            goto 100
C  34 TRAINING DEVICES
         elseif(afsc1 .lt. 35) then
            nper = afsc(14)
            M(14) = M(14) + 1
            i = i + 1
            goto 100
C  36 WIRE COMMUNICATIONS SYSTEM MAINTENANCE
         elseif(afsc1 .lt. 37) then
            nper = afsc(15)
            M(15) = M(15) + 1
            i = i + 1
            goto 100
C  39 MAINTENANCE MANAGEMENT SYSTEMS
         elseif(afsc1 .lt. 40) then
            nper = afsc(16)
            M(16) = M(16) + 1
            i = i + 1
            goto 100
C  40 INTRICATE EQUIPTMENT MAINTENANCE
         elseif(afsc1 .lt. 41) then
            nper = afsc(17)
            M(17) = M(17) + 1
            i = i + 1
            goto 100
C  41 MISSILE SYSTEM MAINTENANCE
         elseif(afsc1 .lt. 42) then
            nper = afsc(18)
            M(18) = M(18) + 1
            i = i + 1
            goto 100
C  42 AIRCRAFT SYSTEM MAINTENANCE
         elseif(afsc1 .lt. 43) then
            nper = afsc(19)
            M(19) = M(19) + 1
            i = i + 1
            goto 100
C  43 AIRCRAFT MAINTENANCE
         elseif(afsc1 .lt. 44) then
            nper = afsc(20)
            M(20) = M(20) + 1
            i = i + 1
            goto 100
C  44 MISSILE MAINTENANCE
         elseif(afsc1 .lt. 45) then
            nper = afsc(21)
```

```
            M(21) = M(21) + 1
            i = i + 1
            goto 100
C  46 MUNITIONS AND WEAPONS MAINTENANCE
         elseif(afsc1 .lt. 47) then
            nper = afsc(22)
            M(22) = M(22) + 1
            i = i + 1
            goto 100
C  47 VEHICLE MAINTENANCE
         elseif(afsc1 .lt. 48) then
            nper = afsc(23)
            M(23) = M(23) + 1
            i = i + 1
            goto 100
C  49 SYSTEM INFORMATION
         elseif(afsc1 .lt. 50) then
            nper = afsc(24)
            M(24) = M(24) + 1
            i = i + 1
            goto 100
C  51 COMPUTER SYSTEM
         elseif(afsc1 .lt. 52) then
            nper = afsc(25)
            M(25) = M(25) + 1
            i = i + 1
            goto 100
C  54 MECHANICAL/ELECTRICAL
         elseif(afsc1 .lt. 55) then
            nper = afsc(26)
            M(26) = M(26) + 1
            i = i + 1
            goto 100
C  55 STRUCTURAL/PAVEMENTS
         elseif(afsc1 .lt. 56) then
            nper = afsc(27)
            M(27) = M(27) + 1
            i = i + 1
            goto 100
C  56 SANITATION
         elseif(afsc1 .lt. 57) then
            nper = afsc(28)
            M(28) = M(28) + 1
            i = i + 1
            goto 100
C  57 FIRE PROTECTION
         elseif(afsc1 .lt. 58) then
            nper = afsc(29)
            M(29) = M(29) + 1
            i = i + 1
            goto 100
C  59 MARINE
         elseif(afsc1 .lt. 60) then
```

```
            nper = afsc(30)
            M(30) = M(30) + 1
            i = i + 1
            goto 100
C  60 TRANSPORTATION
         elseif(afsc1 .lt. 61) then
            nper = afsc(31)
            M(31) = M(31) + 1
            i = i + 1
            goto 100
C  61 SUPPLY SERVICES
         elseif(afsc1 .lt. 62) then
            nper = afsc(32)
            M(32) = M(32) + 1
            i = i + 1
            goto 100
C  62 FOOD SERVICES
         elseif(afsc1 .lt. 63) then
            nper = afsc(33)
            M(33) = M(33) + 1
            i = i + 1
            goto 100
C  63 FUELS
         elseif(afsc1 .lt. 64) then
            nper = afsc(34)
            M(34) = M(34) + 1
            i = i + 1
            goto 100
C  64 SUPPLY
         elseif(afsc1 .lt. 65) then
            nper = afsc(35)
            M(35) = M(35) + 1
            i = i + 1
            goto 100
C  65 PROCUREMENT
         elseif(afsc1 .lt. 66) then
            nper = afsc(36)
            M(36) = M(36) + 1
            i = i + 1
            goto 100
C  66 LOGISTICS PLANS
         elseif(afsc1 .lt. 67) then
            nper = afsc(37)
            M(37) = M(37) + 1
            i = i + 1
            goto 100
C  67 ACCOUNTING, FINANCE AND AUDITING
         elseif(afsc1 .lt. 68) then
            nper = afsc(38)
            M(38) = M(38) + 1
            i = i + 1
            goto 100
C  69 MANAGEMENT AND ANALYSIS
```

```
          elseif(afsc1 .lt. 70) then
             nper = afsc(39)
             M(39) = M(39) + 1
             i = i + 1
             goto 100
C  70 ADMINISTRATION
          elseif(afsc1 .lt. 71) then
             nper = afsc(40)
             M(40) = M(40) + 1
             i = i + 1
             goto 100
C  73 PERSONNEL
          elseif(afsc1 .lt. 74) then
             nper = afsc(41)
             M(41) = M(41) + 1
             i = i + 1
             goto 100
C  74 MORALE WELFARE & RECREATION
          elseif(afsc1 .lt. 75) then
             nper = afsc(42)
             M(42) = M(42) + 1
             i = i + 1
             goto 100
C  75 EDUCATION AND TRAINING
          elseif(afsc1 .lt. 76) then
             nper = afsc(43)
             M(43) = M(43) + 1
             i = i + 1
             goto 100
C  79 PUBLIC AFFAIRS
          elseif(afsc1 .lt. 80) then
             nper = afsc(44)
             M(44) = M(44) + 1
             i = i + 1
             goto 100
C  81 SECURITY POLICE
          elseif(afsc1 .lt. 82) then
             nper = afsc(45)
             M(45) = M(45) + 1
             i = i + 1
             goto 100
C  82 SPECIAL INVESTIGATION & COUNTER INTELLIGENCE
          elseif(afsc1 .lt. 83) then
             nper = afsc(46)
             M(46) = M(46) + 1
             i = i + 1
             goto 100
C  87 BAND
          elseif(afsc1 .lt. 88) then
             nper = afsc(47)
             M(47) = M(47) + 1
             i = i + 1
             goto 100
```

```
C  90 - 91 MEDICAL
         elseif(afsc1 .lt. 92) then
            mper = afsc(48)
            M(48) = M(48) + 1
            i = i + 1
            goto 100
C  92 AIRCREW PROTECTION
         elseif(afsc1 .lt. 93) then
            mper = afsc(49)
            M(49) = M(49) + 1
            i = i + 1
            goto 100
C  98 DENTAL
         elseif(afsc1 .lt. 99) then
            mper = afsc(50)
            M(50) = M(50) + 1
            i = i + 1
            goto 100
C  99 MISCELLANEOUS
         elseif(afsc1 .lt. 100) then
            mper = afsc(51)
            M(51) = M(51) + 1
            i = i + 1
            goto 100
         endif
 100  continue
C     calculate AFSC percentages for female records
C  10 FIRST SERGEANT
         if(afsc2 .lt. 11) then
            fper = afsc(1)
            F(1) = F(1) + 1
            i = i + 1
            goto 50
C  11 AIRCREW OPERATIONS
         elseif(afsc2 .lt. 12) then
            fper = afsc(2)
            F(2) = F(2) + 1
            i = i + 1
            goto 50
C  12 AIRCREW PROTECTION
         elseif(afsc2 .lt. 13) then
            fper = afsc(3  )
            F(3) = F(3) + 1
            i = i + 1
            goto 50
C  20 INTELLIGENCE
         elseif(afsc2 .lt. 21) then
            fper = afsc(4)
            F(4) = F(4) + 1
            i = i + 1
            goto 50
C  22 PHOTOMAPPING
         elseif(afsc2 .lt. 23) then
```

```
            fper = afsc(5)
            F(5) = F(5) + 1
            i = i + 1
            goto 50
C  23 AUDIOVISUAL
         elseif(afsc2 .lt. 24) then
            fper = afsc(6)
            F(6) = F(6) + 1
            i = i + 1
            goto 50
C  24 SAFTY
         elseif(afsc2 .lt. 25) then
            fper = afsc(7)
            F(7) = F(7) + 1
            i = i + 1
            goto 50
C  25 WEATHER
         elseif(afsc2 .lt. 26) then
            fper = afsc(8)
            F(8) = F(8) + 1
            i = i + 1
            goto 50
C  27 COMMAND CONTROL SYSTEM OPERATIONS
         elseif(afsc2 .lt. 28) then
            fper = afsc(9)
            F(9) = F(9) + 1
            i = i + 1
            goto 50
C  29 COMMUNICATIONS OPERATIONS
         elseif(afsc2 .lt. 30) then
            fper = afsc(10)
            F(10) = F(10) + 1
            i = i + 1
            goto 50
C  30 COMMUNICATIONS OPERATIONS
         elseif(afsc2 .lt. 31) then
            fper = afsc(11)
            F(11) = F(11) + 1
            i = i + 1
            goto 50
C  31 MISSILE ELECTRONIC MAINTENANCE
         elseif(afsc2 .lt. 32) then
            fper = afsc(12)
            F(12) = F(12) + 1
            i = i + 1
            goto 50
C  32 AVIONICS SYSTEMS
         elseif(afsc2 .lt. 33) then
            fper = afsc(13)
            F(13) = F(13) + 1
            i = i + 1
            goto 50
C  34 TRAINING DEVICES
```

```
      elseif(afsc2 .lt. 35) then
         fper = afsc(14)
         F(14) = F(14) + 1
         i = i + 1
         goto 50
C  36 WIRE COMMUNICATIONS SYSTEM MAINTENANCE
      elseif(afsc2 .lt. 37) then
         fper = afsc(15)
         F(15) = F(15) + 1
         i = i + 1
         goto 50
C  39 MAINTENANCE MANAGEMENT SYSTEMS
      elseif(afsc2 .lt. 40) then
         fper = afsc(16)
         F(16) = F(16) + 1
         i = i + 1
         goto 50
C  40 INTRICATE EQUIPTMENT MAINTENANCE
      elseif(afsc2 .lt. 41) then
         fper = afsc(17)
         F(17) = F(17) + 1
         i = i + 1
         goto 50
C  41 MISSILE SYSTEM MAINTENANCE
      elseif(afsc2 .lt. 42) then
         fper = afsc(18)
         F(18) = F(18) + 1
         i = i + 1
         goto 50
C  42 AIRCRAFT SYSTEM MAINTENANCE
      elseif(afsc2 .lt. 43) then
         fper = afsc(19)
         F(19) = F(19) + 1
         i = i + 1
         goto 50
C  43 AIRCRAFT MAINTENANCE
      elseif(afsc2 .lt. 44) then
         fper = afsc(20)
         F(20) = F(20) + 1
         i = i + 1
         goto 50
C  44 MISSILE MAINTENANCE
      elseif(afsc2 .lt. 45) then
         fper = afsc(21)
         F(21) = F(21) + 1
         i = i + 1
         goto 50
C  46 MUNITIONS AND WEAPONS MAINTENANCE
      elseif(afsc2 .lt. 47) then
         fper = afsc(22)
         F(22) = F(22) + 1
         i = i + 1
         goto 50
```

```
C  47 VEHICLE MAINTENANCE
         elseif(afsc2 .lt. 48) then
            fper = afsc(23)
            F(23) = F(23) + 1
            i = i + 1
            goto 50
C  49 SYSTEM INFORMATION
         elseif(afsc2 .lt. 50) then
            fper = afsc(24)
            F(24) = F(24) + 1
            i = i + 1
            goto 50
C  51 COMPUTER SYSTEM
         elseif(afsc2 .lt. 52) then
            fper = afsc(25)
            F(25) = F(25) + 1
            i = i + 1
            goto 50
C  54 MECHANICAL/ELECTRICAL
         elseif(afsc2 .lt. 55) then
            fper = afsc(26)
            F(26) = F(26) + 1
            i = i + 1
            goto 50
C  55 STRUCTURAL/PAVEMENTS
         elseif(afsc2 .lt. 56) then
            fper = afsc(27)
            F(27) = F(27) + 1
            i = i + 1
            goto 50
C  56 SANITATION
         elseif(afsc2 .lt. 57) then
            fper = afsc(28)
            F(28) = F(28) + 1
            i = i + 1
            goto 50
C  57 FIRE PROTECTION
         elseif(afsc2 .lt. 58) then
            fper = afsc(29)
            F(29) = F(29) + 1
            i = i + 1
            goto 50
C  59 MARINE
         elseif(afsc2 .lt. 60) then
            fper = afsc(30)
            F(30) = F(30) + 1
            i = i + 1
            goto 50
C  60 TRANSPORTATION
         elseif(afsc2 .lt. 61) then
            fper = afsc(31)
            F(31) = F(31) + 1
            i = i + 1
```

```
            goto 50
C  61 SUPPLY SERVICES
         elseif(afsc2 .lt. 62) then
            fper = afsc(32)
            F(32) = F(32) + 1
            i = i + 1
            goto 50
C  62 FOOD SERVICES
         elseif(afsc2 .lt. 63) then
            fper = afsc(33)
            F(33) = F(33) + 1
            i = i + 1
            goto 50
C  63 FUELS
         elseif(afsc2 .lt. 64) then
            fper = afsc(34)
            F(34) = F(34) + 1
            i = i + 1
            goto 50
C  64 SUPPLY
         elseif(afsc2 .lt. 65) then
            fper = afsc(35)
            F(35) = F(35) + 1
            i = i + 1
            goto 50
C  65 PROCUREMENT
         elseif(afsc2 .lt. 66) then
            fper = afsc(36)
            F(36) = F(36) + 1
            i = i + 1
            goto 50
C  66 LOGISTICS PLANS
         elseif(afsc2 .lt. 67) then
            fper = afsc(37)
            F(37) = F(37) + 1
            i = i + 1
            goto 50
C  67 ACCOUNTING, FINANCE AND AUDITING
         elseif(afsc2 .lt. 68) then
            fper = afsc(38)
            F(38) = F(38) + 1
            i = i + 1
            goto 50
C  69 MANAGEMENT AND ANALYSIS
         elseif(afsc2 .lt. 70) then
            fper = afsc(39)
            F(39) = F(39) + 1
            i = i + 1
            goto 50
C  70 ADMINISTRATION
         elseif(afsc2 .lt. 71) then
            fper = afsc(40)
            F(40) = F(40) + 1
```

```
            i = i + 1
            goto 50
C  73 PERSONNEL
         elseif(afsc2 .lt. 74) then
            fper = afsc(41)
            F(41) = F(41) + 1
            i = i + 1
            goto 50
C  74 MORALE WELFARE & RECREATION
         elseif(afsc2 .lt. 75) then
            fper = afsc(42)
            F(42) = F(42) + 1
            i = i + 1
            goto 50
C  75 EDUCATION AND TRAINING
         elseif(afsc2 .lt. 76) then
            fper = afsc(43)
            F(43) = F(43) + 1
            i = i + 1
            goto 50
C  79 PUBLIC AFFAIRS
         elseif(afsc2 .lt. 80) then
            fper = afsc(44)
            F(44) = F(44) + 1
            i = i + 1
            goto 50
C  81 SECURITY POLICE
         elseif(afsc2 .lt. 82) then
            fper = afsc(45)
            F(45) = F(45) + 1
            i = i + 1
            goto 50
C  82 SPECIAL INVESTIGATION & COUNTER INTELLIGENCE
         elseif(afsc2 .lt. 83) then
            fper = afsc(46)
            F(46) = F(46) + 1
            i = i + 1
            goto 50
C  87 BAND
         elseif(afsc2 .lt. 88) then
            fper = afsc(47)
            F(47) = F(47) + 1
            i = i + 1
            goto 50
C  90 - 91 MEDICAL
          elseif(afsc2 .lt. 92) then
            fper = afsc(48)
            F(48) = F(48) + 1
            i = i + 1
            goto 50
C  92 AIRCREW PROTECTION
         elseif(afsc2 .lt. 93) then
            fper = afsc(49)
```

```
            F(49) = F(49) + 1
            i = i + 1
            goto 50
C  98 DENTAL
         elseif(afsc2 .lt. 99) then
            fper = afsc(50)
            F(50) = F(50) + 1
            i = i + 1
            goto 50
C  99 MISCELLANEOUS
         elseif(afsc2 .lt. 100) then
            fper = afsc(51)
            F(51) = F(51) + 1
            i = i + 1
            goto 50
         endif
         goto 50
      endif
 50   write (12,30) lensep,mrank,frank,mper,fper,depst,mafsc,fafsc
      goto 155
 1000 continue
      write (13,60)
      write (13,101)M(1),F(1)
      write (13,102)M(2),F(2)
      write (13,103)M(3),F(3)
      write (13,104)M(4),F(4)
      write (13,105)M(5),F(5)
      write (13,106)M(6),F(6)
      write (13,107)M(7),F(7)
      write (13,108)M(8),F(8)
      write (13,109)M(9),F(9)
      write (13,110)M(10),F(10)
      write (13,111)M(11),F(11)
      write (13,112)M(12),F(12)
      write (13,113)M(13),F(13)
      write (13,114)M(14),F(14)
      write (13,115)M(15),F(15)
      write (13,116)M(16),F(16)
      write (13,117)M(17),F(17)
      write (13,118)M(18),F(18)
      write (13,119)M(19),F(19)
      write (13,120)M(20),F(20)
      write (13,121)M(21),F(21)
      write (13,122)M(22),F(22)
      write (13,123)M(23),F(23)
      write (13,124)M(24),F(24)
      write (13,125)M(25),F(25)
      write (13,126)M(26),F(26)
      write (13,127)M(27),F(27)
      write (13,128)M(28),F(28)
      write (13,129)M(29),F(29)
      write (13,130)M(30),F(30)
      write (13,131)M(31),F(31)
```

```
      write (13,132)M(32),F(32)
      write (13,133)M(33),F(33)
      write (13,134)M(34),F(34)
      write (13,135)M(35),F(35)
      write (13,136)M(36),F(36)
      write (13,137)M(37),F(37)
      write (13,138)M(38),F(38)
      write (13,139)M(39),F(39)
      write (13,140)M(40),F(40)
      write (13,141)M(41),F(41)
      write (13,142)M(42),F(42)
      write (13,143)M(43),F(43)
      write (13,144)M(44),F(44)
      write (13,145)M(45),F(45)
      write (13,146)M(46),F(46)
      write (13,147)M(47),F(47)
      write (13,148)M(48),F(48)
      write (13,149)M(49),F(49)
      write (13,150)M(50),F(50)
      write (13,151)M(51),F(51)
      write (13,4)
      do 989 j = 1, 9
        write (13,5) j, women(j), men(j)
 989  continue
  4    format (1x,/,' THE RANK DISTRIBUTION OF WOMEN AND MEN IS ',
     + 'AS FOLLOWS:')
  5    format (1x, /,'In the rank E-',I1,' there are ',i6,' women ',
     + 'and', i6,' men')
 10    format (f6.4)
 20    format (i5)
 30    format (I2,I1,I1,f6.4,f6.4,I1,I2,I2)
 40    format (I9,I2,I1,A4,I2,I2,I1,I2,I1,I1,I1,I9)
 60    format (1x, ' SUMMARY OF ENLISTED AFSCS - JOIN SPOUCE STUDY')
101    format (1x,'AFSC 10 FIRST SERGEANT                    ',
     + I5,' MALES',I5,' FEMALES')
102    format (1x,'AFSC 11 AIRCREW OPERATIONS                ',
     + I5,' MALES',I5,' FEMALES')
103    format (1x,'AFSC 12 AIRCREW PROTECTION                ',
     + I5,' MALES',I5,' FEMALES')
104    format (1x,'AFSC 20 INTELLIGENCE                      ',
     + I5,' MALES',I5,' FEMALES')
105    format (1x,'AFSC 22 PHOTOMAPPING                      ',
     + I5,' MALES',I5,' FEMALES')
106    format (1x,'AFSC 23 AUDIOVISUAL                       ',
     + I5,' MALES',I5,' FEMALES')
107    format (1x,'AFSC 24 SAFTEY                            ',
     + I5,' MALES',I5,' FEMALES')
108    format (1x,'AFSC 25 WEATHER                           ',
     + I5,' MALES',I5,' FEMALES')
109    format (1x,'AFSC 27 COMMAND CONTROL SYSTEM OPERATIONS',
     + I5,' MALES',I5,' FEMALES')
110    format (1x,'AFSC 29 COMMUNICATIONS OPERATIONS         ',
     + I5,' MALES',I5,' FEMALES')
```

```
111   format (1x,'AFSC 30 COMMUNICATIONS OPERATIONS        ',
     + I5,' MALES',I5,' FEMALES')
112   format (1x,'AFSC 31 MISSILE ELECTRONIC MAINTENANCE   ',
     + I5,' MALES',I5,' FEMALES')
113   format (1x,'AFSC 32 AVIONICS SYSTEMS                 ',
     + I5,' MALES',I5,' FEMALES')
114   format (1x,'AFSC 34 TRAINING DEVICES                 ',
     + I5,' MALES',I5,' FEMALES')
115   format (1x,'AFSC 36 WIRE COMMUNICATION SYSTEM MAINT. ',
     + I5,' MALES',I5,' FEMALES')
116   format (1x,'AFSC 39 MAINTENANCE MANAGEMENT SYSTEMS   ',
     + I5,' MALES',I5,' FEMALES')
117   format (1x,'AFSC 40 INTRICATE EQUIPTMENT MAINTENANCE ',
     + I5,' MALES',I5,' FEMALES')
118   format (1x,'AFSC 41 MISSILE SYSTEM MAINTENANCE       ',
     + I5,' MALES',I5,' FEMALES')
119   format (1x,'AFSC 42 AIRCRAFT SYSTEM MAINTENANCE      ',
     + I5,' MALES',I5,' FEMALES')
120   format (1x,'AFSC 43 AIRCRAFT MAINTENANCE             ',
     + I5,' MALES',I5,' FEMALES')
121   format (1x,'AFSC 44 MISSILE SYSTEM MAINTENANCE       ',
     + I5,' MALES',I5,' FEMALES')
122   format (1x,'AFSC 46 MUNITIONS AND WEAPONS MAINTENANCE',
     + I5,' MALES',I5,' FEMALES')
123   format (1x,'AFSC 47 VEHICLE MAINTENANCE              ',
     + I5,' MALES',I5,' FEMALES')
124   format (1x,'AFSC 49 SYSTEM INFORMATION               ',
     + I5,' MALES',I5,' FEMALES')
125   format (1x,'AFSC 51 COMPUTER SYSTEMS                 ',
     + I5,' MALES',I5,' FEMALES')
126   format (1x,'AFSC 54 MECHANICAL/ELECTRICAL            ',
     + I5,' MALES',I5,' FEMALES')
127   format (1x,'AFSC 55 STRUCTURAL/PAVEMENTS             ',
     + I5,' MALES',I5,' FEMALES')
128   format (1x,'AFSC 56 SANITATION                       ',
     + I5,' MALES',I5,' FEMALES')
129   format (1x,'AFSC 57 FIRE PROTECTION                  ',
     + I5,' MALES',I5,' FEMALES')
130   format (1x,'AFSC 59 MARINE                           ',
     + I5,' MALES',I5,' FEMALES')
131   format (1x,'AFSC 60 TRASPORTATION                    ',
     + I5,' MALES',I5,' FEMALES')
132   format (1x,'AFSC 61 SUPPLY SERVICES                  ',
     + I5,' MALES',I5,' FEMALES')
133   format (1x,'AFSC 62 FOOD SERVICES                    ',
     + I5,' MALES',I5,' FEMALES')
134   format (1x,'AFSC 63 FUELS                            ',
     + I5,' MALES',I5,' FEMALES')
135   format (1x,'AFSC 64 SUPPLY                           ',
     + I5,' MALES',I5,' FEMALES')
136   format (1x,'AFSC 65 PROCUREMENT                      ',
     + I5,' MALES',I5,' FEMALES')
137   format (1x,'AFSC 66 LOGISTIC PLANS                   ',
```

```
     * I5,' MALES',I5,' FEMALES')
138   format (1x,'AFSC 67 ACCOUNTING, FINANCE & AUDITING   ',
     * I5,' MALES',I5,' FEMALES')
139   format (1x,'AFSC 69 MANAGEMENT ANALYSIS              ',
     * I5,' MALES',I5,' FEMALES')
140   format (1x,'AFSC 70 ADMINISTRATION                   ',
     * I5,' MALES',I5,' FEMALES')
141   format (1x,'AFSC 73 PERSONNEL                        ',
     * I5,' MALES',I5,' FEMALES')
142   format (1x,'AFSC 74 MORALE WELFARE AND RECREATION    ',
     * I5,' MALES',I5,' FEMALES')
143   format (1x,'AFSC 75 EDUCATION & TRAINING             ',
     * I5,' MALES',I5,' FEMALES')
144   format (1x,'AFSC 79 PUBLIC AFFAIRS                   ',
     * I5,' MALES',I5,' FEMALES')
145   format (1x,'AFSC 81 SECURITY POLICE                  ',
     * I5,' MALES',I5,' FEMALES')
146   format (1x,'AFSC 82 SPECIAL INVEST. & COUNTER INTELL.',
     * I5,' MALES',I5,' FEMALES')
147   format (1x,'AFSC 87 BAND                             ',
     * I5,' MALES',I5,' FEMALES')
148   format (1x,'AFSC 90 MEDICAL                          ',
     * I5,' MALES',I5,' FEMALES')
149   format (1x,'AFSC 92 AIRCREW PROTECTION               ',
     *I5,' MALES',I5,' FEMALES')
150   format (1x,'AFSC 98 DENTAL                           ',
     * I5,' MALES',I5,' FEMALES')
151   format (1x,'AFSC 99 MISCELLANEOUS                    ',
     * I5,' MALES',I5,' FEMALES')
      stop
      end
```

```
      program delm
c     This program reduces the data base (DB) file. It eliminates all
c     those records which have been used to update the Working Data
c     file (WD).  It also eliminates the records of those individuals
c     which have completed a separation and are now re-united.
c     Input
c        data base file (DBU)
c             field   title     description                 type/length
c               1       id        member's pseudo code          I9
c               2       spid      spouce's pseudo code          I9
c               3       rank      rank                          I1
c               4       AFSC      AFSC (1st 2 digits)           I2
c               5       intent    assignment intention          A1
c               6       deps      number of dependents          I2
c               7       sex       sex                           A1
c               8       yy        year arrived duty loc.        I2
c               9       mm        month arrived duty loc.       I2
c               10      dd        day arrived duty loc.         I2
c               11      loc       duty location                 A4
c               12      flag      flag                          A1
c
c
c     Output:
c        data base file (DBR)
c        DBU file reduced to those records that are new.
c             field     title   description               type/length
c               1         id      member's pseudo code        I9
c               2         spid    spouce's pseudo code        I9
c               3         rank    rank                        I1
c               4         AFSC    AFSC (1st 2 digits)         I2
c               5         intent  assignment intention        A1
c               6         deps    number of dependents        I2
c               7         sex     sex                         A1
c               8         yy      year arrived duty loc.      I2
c               9         mm      month arrived duty loc.     I2
c               10        dd      day arrived duty loc.       I2
c               11        loc     duty location               A4
c               12        flag    flag                        A1
c
c        statistics on number of no-match, complete, and matched
c            records in DBU
c
c     Variables:
c        c = the number of complete records (deleted)
c        n = the number of nonmatched records
c        m = the number of matched records (deleted)
c
c
       integer h ,id,spid,rank,AFSC,deps,yy,mm,dd
       character intent,sex,flag
       character*4 loc
       open (8, file = 'dbr.dat', status = 'OLD')
       open (11, file = 'dbrm.dat', status = 'NEW')
```

```
      open (12,file = 'delm.dat', status = 'new')
      open (10, file = 'delm.out', status = 'NEW')
      write (*,*) 'Please insert the number of records in DB.'
      read (*,30) L
      i = 1
      j = 1
      h = 0
100   if (i .gt. L) then
         goto 1000
       else
         read (8,20) id,spid,rank,AFSC,intent,deps,sex,yy,mm,dd,
     +       loc,flag
         if (flag .eq. 'M'.or. flag .eq. 'C') then
            h = h + 1
            i = i + 1
            write (12,20)id,spid,rank,AFSC ,intent,deps,sex,
     +       yy,mm,dd,loc,flag
            goto 100
          else
            write (11,20)id,spid,rank,AFSC ,intent,deps,sex,
     +       yy,mm,dd,loc,flag
            n = n + 1
            j = j + 1
            i = i + 1
            goto 100
         endif
      endif
1000  continue
      write (10,40) n
      write (10,50) h
20    format (I9,I9,I1,I2,A1,I2,A1,I2,I2,I2,A4,A1)
30    format (I5)
40    FORMAT (1X,'There are ',I5,' recs in the data base (DBR) file',
     +' which represent',/,
     +' records that have not yet been matched.')
50    FORMAT (1X,'There are ',I5,' records in the data base (DB) file',
     +' which represent',/,
     +' records that have already been matched ,',
     +/,' and these have been deleted')
      stop
      end
```

```
      program updat
c
c       This program updates the existing working data (WD) file with the
c     information from the current year's data base (DBR).  If the
c     individual is NOT separated from their spouse, the following
c     information will be updated:
c              location code                        loc
c              year assigned to present location    yy
c              month assigned to present location   mm
c              current AFSC                         AFSC
c              current rank                         rank
c              status of dependents                 deps
c     If the individual is separated from their spouse the following
c     information will be updated:
c              location code                        loc
c              year assigned to present location    yy
c              month assigned to present location   mm
c     Rank, AFSC, and staus of dependents will remain fixed at the level
c     they were when they were separated until they are re-united.
c
c       Variables:
c          k = the number of WD records
c          l = the number of DBR records
c          n = the number of DBR records that are 'no-match'
c          m = the number of DBR records that match records in WD
c          c = the number of DBR records that match complete WD records
c
c       Input:
c          data base file (DBR)
c               field        title                        type/length
c                 1          member's pseudo code            I9
c                 2          spouse's pseudo code            I9
c                 3          rank                            I1
c                 4          AFSC (1st 2 digits)             I2
c                 5          assignment intention            A1
c                 6          number of dependents            I2
c                 7          sex                             A1
c                 8          year arrived duty loc.          I2
c                 9          month arrived duty loc.         I2
c                 10         day arrived duty loc.           I2
c                 11         duty location                   A4
c                 12         flag                            A1
c
c            working data file (WD)
c               field        title                        type/length
c                 1          members pseudo code             I9
c                 2          AFSC (1st 2 digits)             I2
c                 3          rank                            I1
c                 4          duty location                   A4
c                 5          year arrived duty loc.          I2
c                 6          month arrived duty loc.         I2
c                 7          status of dependents            I1
```

```
c               8          length of separation (LOS)    I2
c               9          flag (0,1,2)                  I1
c               10         move indicator (0,1)          I1
c               11         update indicator              I1
c               12         spouse's pseudo code          I9
c     Output:
c        data base file (DBU) marked as updated
c             field        title                      type/length
c               1          member's pseudo code          I9
c               2          spouse's pseudo code          I9
c               3          rank                          I1
c               4          AFSC (1st 2 digits)           I2
c               5          assignment intention          A1
c               6          number of dependents          I2
c               7          sex                           A1
c               8          year arrived duty loc.        I2
c               9          month arrived duty loc.       I2
c               10         day arrived duty loc.         I2
c               11         duty location                 A4
c               12         flag                          A1
c         working data file (WDR)
c             field        title                      type/length
c               1          members pseudo code           I9
c               2          AFSC (1st 2 digits)           I2
c               3          rank                          I1
c               4          duty location                 A4
c               5          year arrived duty loc.        I2
c               6          month arrived duty loc.       I2
c               7          status of dependents          I1
c               8          length of separation (LOS)    I2
c               9          flag (0,1,2)                  I1
c               10         move indicator (0,1)          I1
c               11         update indicator (0,1)        I1
c               12         spouse's pseudo code          I9
c         updat.out
c            statistics on number of no-match, complete, and matched
c            records in DB
c
c
      program update
      integer  c,uplim,lowlim,dm,id,AFSC,rank
      integer yy,mm,deps,flag,move,updat,spid
      integer id2(40000),spid2(40000),afsc2(40000),rank2(40000)
      integer deps2(40000),yy2(40000)
      integer mm2(40000),dd2(40000)
      character*4 loc, loc2(40000)
      character inten2(40000),sex2(40000),flag2(40000)
      open (8, file = 'dbr.dat', status = 'OLD')
      open (12, file = 'wdr.dat', status = 'old')
      open (9, file = 'wd.dat', status = 'new')
      open (10, file = 'updat.out', status = 'NEW')
      write (*,*) 'Please insert the number of records in WDR.'
      read (*,30) lastwd
```

```
      m = 0
      c = 0
      n = 0
      dm = 0
      i = 1
101   read (8,20,end= 199)Id2(i),Spid2(i),Rank2(i),Afsc2(i),Inten2(i),
     +Deps2(i),Sex2(i),Yy2(i),Mm2(i),Dd2(i),Loc2(i),Flag2(i)
      i = i + 1
      goto 101
199   continue
      lastdb = i - 1
      j = 1
100   if (j .gt. lastwd)then
         goto 1000
       else
         read (12,10) id,afsc,rank,loc,yy,mm,deps,los,flag,move,
     +      updat,spid
         lowlim = 1
         uplim = lastdb
         i = (uplim+lowlim)/2
300      if ( abs(uplim-lowlim) .eq. 1) then
            j = j + 1
            N = N + 1
            write (9,10) id,afsc,rank,loc,yy,mm,deps,los,flag,move,
     +      updat,spid
            go to 100
           else
200         if ( Id2(i) .eq. id) then
               if (Flag .eq. 2) then
                  Flag2(i) = 'C'
                  j = j + 1
                  c = c + 1
                  write (9,10) id,afsc,rank,loc,yy,mm,deps,
     +            los,flag,move,updat,spid
                  go to 100
                 else
                  if (spid .ne. spid2(i))then
                    flag2(i) = 'D'
                    updat= 8
                    dm = dm + 1
                    j = j + 1
                  write (9,10) id,afsc,rank,loc,yy,mm,deps,los,
     +             flag,move, updat,spid
                    goto 100
                  endif
                  Flag2(i) = 'M'
                  m = m + 1
400               if (Flag .eq. 0 )then
                     if(Loc .ne. Loc2(i)) then
                         move = 1
                     endif
                     if (Deps2(i) .gt. 0 ) then
                        Deps = 1
```

```
                    endif
                    Loc = Loc2(i)
                    Yy = Yy2(i)
                    Mm = Mm2(i)
                    AFSC = Afsc2(i)
                    Rank = Rank2(i)
                    Updat =5
                    j = j + 1
                    write (9,10) id,afsc,rank,loc,yy,mm,deps,los,
     +              flag,move, updat,spid
                    goto 100
                   else
                    if (Loc .ne. Loc2(i)) then
                       move = 1
                    endif
                    loc = loc2(i)
                    yy = yy2(i)
                    mm = mm2(i)
                    updat = 5
                    j = j + 1
                    write (9,10) id,afsc,rank,loc,yy,mm,deps,los,
     +              flag,move, updat,spid
                    go to 100
                  endif
                 endif
                else
                 if (id .gt. id2(i))then
                    lowlim = i
                    i = (uplim + lowlim )/2
                   go to 300
                 endif
                 if (id .lt. id2(i)) then
                    uplim = i
                    i = (uplim + lowlim)/2
                    goto 300
                  endif
               endif
             endif
           endif
1000  continue
      rewind 8
      do 1200 i = 1,lastdb
      write (8,20) Id2(i),Spid2(i),Rank2(i),Afsc2(i),Inten2(i),
     +Deps2(i),Sex2(i),Yy2(i),Mm2(i),Dd2(i),Loc2(i),Flag2(i)
1200  continue
      write (10,40) N
      write (10,50) M
      write (10,60) C
      write (10,70) dm
10    format (I9,I2,I1,A4,I2,I2,I1,I2,I1,I1,I1,I9)
20    format (I9,I9,I1,I2,A1,I2,A1,I2,I2,I2,A4,A1)
30    format (I6)
40    FORMAT (1X,'There are ',I5,' records in the data base (DBR) file',
```

```
     +' which ',/,
     +'  do not match a record in the working data file (Wdr).')
50    FORMAT (1X,'There are ',I5,' records in the data base (DBR) file',
     +' which ',/,
     +'  do match records in the working data file (Wdr).')
60    FORMAT (1X,'There are ',I5,' records in the data base (DBR) file',
     +' which ',/,
     +'  are complete in the working data file (Wdr).')
70    format (1x,'There are ',i5,' records in the DBR file which',
     +' represent ',/,'individuals who have divorced and remarried'
     +' another active duty airman.')
      stop
      end
```

```
      program del0
c     This program reduces the working data file by
c     removing all records which were not updated during
c     the last update cycle.  The records that are
c     deleted represent individuals that were divorced
c     or left the service during the last year.  Only
c     those records which indicate that the couple has
c     not completed a move and are now reunited.
c
c      working data file (WD)
c          field   title      description              type/length
c            1       id       members pseudo code         I9
c            2       AFSC     AFSC (1st 2 digits)         I2
c            3       rank     rank                        I1
c            4       loc      duty location               A4
c            5       yy       year arrived duty loc.      I2
c            6       mm       month arrived duty loc.     I2
c            7       dd       status of dependents        I1
c            8       los      length of separation (LOS)  I2
c            9       flag     flag (0,1,2)                I1
c            10      move     move indicator (0,1)        I1
c            11      updat    update indicator (0,1)      I1
c            12      spid     spouse's pseudo code        I9
c
c
c     Output:
c        WD file updated
c
  program del0
     integer h ,id,spid,rank,AFSC,deps,yy,mm,
    + flag, move,updat,los
     character*4 loc
     open (8, file = 'wdr.dat', status = 'OLD')
     open (11, file = 'wdrg.dat', status = 'NEW')
     open (10, file = 'wdr0.out', status = 'NEW')
     write (*,*) 'Please insert the number of records in DB.'
     read (*,30) L
     i = 1
     j = 1
     h = 0
100  if (i .gt. L) then
        goto 1000
      else
        read (8,20) id,AFSC,rank,loc,yy,mm,deps,los,flag,move,
    +   updat,spid
        if (flag .eq. 0 .and. updat .le.4 .and. move .ne. 1)then
           h = h + 1
           i = i + 1
           write (10,20)id,AFSC ,rank,loc,yy,mm,deps,
    +      los,flag,move,updat,spid
```

```
            goto 100
           else
            write (11,20)id,AFSC,rank,loc,
     +      yy,mm,deps,los,flag,move,updat,spid
            n = n + 1
            j = j + 1
            i = i + 1
            goto 100
           endif
         endif
1000     continue
         write (10,40) h
         write (10,50) n
20       format (I9,i2,i1,a4,i2,i2,i1,i2,i1,i1,i1,i9)
30       format (I5)
40       FORMAT (1X,'There are ',I5,' recs in the data base (WDR) file',
        +' which represent',/,
        +' records that have not yet been matched since 1980.')
50       FORMAT (1X,'There are ',I5,' records in the data base '
        + '(WDR) file which represent',/,
        +' records that have already been matched')
         stop
         end
```

```
      program appen
      integer wdr(38000,35),wdrn(10000,35)
      open (8, file = 'wdr.dat',status = 'old')
      open (9, file = 'wdrn.dat',status = 'old')
      open (11,file = 'appen.out',status = 'new')
      open (10, file = 'wdr2.dat',status = 'new')
      i = 1
 5    read (8,10,end = 99) (wdr(i,j), j = 1,12)
      i = i + 1
      goto 5
 99   continue
      last1 = i - 1
      k = 1
15    read (9,10,end = 199) (wdrn(k,j), j = 1,12)
      k = k + 1
      goto 15
199   continue
      rewind 8
      last2 = k - 1
      do 200 i = 1,last1
      if (wdr(i,11) .ne. 9 .and. wdr(i,11) .ne. 8 .or. wdr(i,9)
     + .eq. 2 )then
        write (10,10) (wdr(i,j), j = 1,12)
       else
        write (11,10) (wdr(i,j),j = 1,12)
      endif
200   continue
      DO 300 K = 1,last2
      if (wdrn(k,11) .ne. 9 )then
        write (10,10) (wdrn(k,j), j = 1,12)
       else
        write (11,10) (wdrn(k,j), j = 1,12)
      endif
300   continue
 10   format (I9,I2,I1,A4,I2,I2,I1,I2,I1,I1,I1,I9)
      STOP
      END
```

MILITARY SPOUSE INFORMATION

(THIS FORM IS SUBJECT TO THE PRIVACY ACT OF 1974)

AUTHORITY: 10 U.S.C. 8012; 44 U.S.C. 3101; and EO 9397.
PRINCIPAL PURPOSE: To provide information concerning military spouse.
ROUTINE USES: Used as a source document for data entered into the Personnel Data System. SSAN is used for identification.
DISCLOSURE IS VOLUNTARY: If the information is not provided, assignment is made without regard to spouse's status.

1. NAME *(Last, First, Middle Initial)*	2. GRADE	3. SSAN

4. ORGANIZATION	5. DUTY PHONE

6. MILITARY STATUS OF SPOUSE *(Check one)*	7. SPOUSE'S SSAN
☐ ENLISTED US AIR FORCE ☐ OFFICER US AIR FORCE ☐ OTHER US MILITARY SERVICE	

8. JOIN SPOUSE ASSIGNMENT INTENT

I WISH TO BE CONSIDERED FOR JOIN SPOUSE ASSIGNMENT IF I OR MY SPOUSE IS SELECTED FOR ASSIGNMENT TO *(Check one)*

☐ CONUS OR ANY OVERSEA TOUR
☐ CONUS OR OVERSEA LONG TOUR
[redacted]
☐ JOIN SPOUSE ASSIGNMENT NOT DESIRED

NOTES: 1. For the purpose of assignment selections, short tours are those for which the all-others tour length is less than 15 months or the accompanied-by-dependents tour is not authorized. 2. When military couples are considered for short-tour join spouse assignments, assignments may be at separate locations if assignment at the same location is not practical. 3. Join spouse assignment is considered only if both spouses indicate that join spouse assignment is desired.

9. CHANGE OF STATUS *(Check block if applicable)*
☐ I AM NO LONGER MARRIED TO ANOTHER MILITARY MEMBER. PLEASE DELETE ALL MILITARY SPOUSE INFORMATION IN MY RECORDS.

CERTIFICATION

DATE	SIGNATURE	*CBPO USE ONLY*	
		DATE OF BLPS UPDATE	INITIALS

AF FORM JUL 79 1048

U.S. G.P.O. 1979-620-018/7065

Appendix C

STATISTICS FROM THE DATA BASE (DB)
FOR THE YEAR 1980
(AFTER THE 'H' RECORDS HAD BEEN DELETED)

There are 10921 males and 10834 females.
There are 3691 males with dependents
There are 1557 females with dependents

THE RANK DISTRIBUTION OF WOMEN AND MEN IS AS FOLLOWS:

In the rank E-1 there are	20	women and	13	men
In the rank E-2 there are	294	women and	118	men
In the rank E-3 there are	2864	women and	520	men
In the rank E-4 there are	4448	women and	3608	men
In the rank E-5 there are	3006	women and	4112	men
In the rank E-6 there are	181	women and	1138	men
In the rank E-7 there are	19	women and	332	men
In the rank E-8 there are	2	women and	54	men
In the rank E-9 there are	0	women and	26	men

There are 21755 persons who want to be assigned with their spouse, and 0 who did not request join spouse assignment consideration.

In AFSC 10 there are	19 men and	0 women
In AFSC 11 there are	162 men and	2 women
In AFSC 12 there are	0 men and	0 women
In AFSC 20 there are	373 men and	347 women
In AFSC 22 there are	1 men and	0 women
In AFSC 23 there are	95 men and	138 women
In AFSC 24 there are	33 men and	14 women
In AFSC 25 there are	70 men and	80 women
In AFSC 27 there are	392 men and	441 women
In AFSC 29 there are	283 men and	451 women
In AFSC 30 there are	606 men and	381 women
In AFSC 31 there are	92 men and	41 women
In AFSC 32 there are	685 men and	488 women

In AFSC 34	there are	54	men and	34	women
In AFSC 36	there are	112	men and	34	women
In AFSC 39	there are	65	men and	44	women
In AFSC 40	there are	35	men and	15	women
In AFSC 41	there are	0	men and	0	women
In AFSC 42	there are	870	men and	779	women
In AFSC 43	there are	921	men and	324	women
In AFSC 44	there are	80	men and	53	women
In AFSC 46	there are	362	men and	33	women
In AFSC 47	there are	121	men and	20	women
In AFSC 49	there are	0	men and	0	women
In AFSC 51	there are	159	men and	161	women
In AFSC 54	there are	231	men and	119	women
In AFSC 55	there are	325	men and	152	women
In AFSC 56	there are	41	men and	16	women
In AFSC 57	there are	128	men and	24	women
In AFSC 59	there are	5	men and	0	women
In AFSC 60	there are	392	men and	407	women
In AFSC 61	there are	39	men and	62	women
In AFSC 62	there are	110	men and	144	women
In AFSC 63	there are	183	men and	18	women
In AFSC 64	there are	704	men and	1215	women
In AFSC 65	there are	28	men and	53	women
In AFSC 66	there are	13	men and	5	women
In AFSC 67	there are	192	men and	295	women
In AFSC 69	there are	12	men and	16	women
In AFSC 70	there are	692	men and	1866	women
In AFSC 73	there are	351	men and	597	women
In AFSC 74	there are	48	men and	69	women
In AFSC 75	there are	85	men and	85	women
In AFSC 79	there are	22	men and	49	women
In AFSC 81	there are	869	men and	241	women
In AFSC 82	there are	13	men and	4	women
In AFSC 87	there are	31	men and	23	women
In AFSC 90	there are	487	men and	993	women
In AFSC 91	there are	107	men and	117	women
In AFSC 92	there are	70	men and	40	women
In AFSC 98	there are	119	men and	309	women
In AFSC 99	there are	34	men and	35	women

STATISTICS FROM THE DATA BASE (DB)
FOR THE YEAR 1981
(AFTER THE 'H' RECORDS HAD BEEN DELETED)

There are 12800 males and 12707 females.
There are 4333 males with dependents
There are 2074 females with dependents

THE RANK DISTRIBUTION OF WOMEN AND MEN IS AS FOLLOWS:

In the rank E-1 there are	30	women and	15 men
In the rank E-2 there are	216	women and	104 men
In the rank E-3 there are	2765	women and	1595 men
In the rank E-4 there are	5302	women and	3972 men
In the rank E-5 there are	4008	women and	5053 men
In the rank E-6 there are	343	women and	1463 men
In the rank E-7 there are	39	women and	500 men
In the rank E-8 there are	3	women and	66 men
In the rank E-9 there are	1	women and	32 men

There are 25507 persons who want to be assigned with their spouse and 40 who did not request join spouse assignment consideration.

SUMMARY OF AFSC DISTRIBUTION

In AFSC 10 there are	23	men and	0	women
In AFSC 11 there are	200	men and	3	women
In AFSC 12 there are	67	men and	47	women
In AFSC 20 there are	429	men and	424	women
In AFSC 22 there are	0	men and	0	women
In AFSC 23 there are	106	men and	146	women
In AFSC 24 there are	40	men and	24	women
In AFSC 25 there are	78	men and	91	women
In AFSC 27 there are	467	men and	546	women
In AFSC 29 there are	304	men and	500	women
In AFSC 30 there are	680	men and	419	women
In AFSC 31 there are	90	men and	52	women
In AFSC 32 there are	735	men and	504	women
In AFSC 34 there are	53	men and	35	women
In AFSC 36 there are	129	men and	37	women
In AFSC 39 there are	66	men and	63	women
In AFSC 40 there are	24	men and	14	women

In	AFSC	41	there are	0	men and	0	women
In	AFSC	42	there are	1099	men and	896	women
In	AFSC	43	there are	1052	men and	399	women
In	AFSC	44	there are	76	men and	54	women
In	AFSC	46	there are	456	men and	74	women
In	AFSC	47	there are	142	men and	37	women
In	AFSC	49	there are	0	men and	0	women
In	AFSC	51	there are	197	men and	196	women
In	AFSC	54	there are	288	men and	142	women
In	AFSC	55	there are	402	men and	191	women
In	AFSC	56	there are	43	men and	28	women
In	AFSC	57	there are	140	men and	24	women
In	AFSC	59	there are	5	men and	0	women
In	AFSC	60	there are	463	men and	455	women
In	AFSC	61	there are	49	men and	77	women
In	AFSC	62	there are	124	men and	172	women
In	AFSC	63	there are	210	men and	33	women
In	AFSC	64	there are	849	men and	1436	women
In	AFSC	65	there are	32	men and	73	women
In	AFSC	66	there are	18	men and	9	women
In	AFSC	67	there are	232	men and	369	women
In	AFSC	69	there are	16	men and	21	women
In	AFSC	70	there are	806	men and	2141	women
In	AFSC	73	there are	407	men and	700	women
In	AFSC	74	there are	52	men and	85	women
In	AFSC	75	there are	99	men and	123	women
In	AFSC	79	there are	30	men and	53	women
In	AFSC	81	there are	1080	men and	330	women
In	AFSC	82	there are	19	men and	3	women
In	AFSC	87	there are	37	men and	29	women
In	AFSC	90	there are	528	men and	1084	women
In	AFSC	91	there are	106	men and	149	women
In	AFSC	92	there are	79	men and	90	women
In	AFSC	98	there are	128	men and	345	women
In	AFSC	99	there are	45	men and	42	women

STATISTICS FROM THE DATA BASE (DB)
FOR THE YEAR 1982
(AFTER THE 'H' RECORDS HAD BEEN DELETED)

There are 15155 males and 14995 females.
There are 4846 males with dependents
There are 2741 females with dependents

THE RANK DISTRIBUTION OF WOMEN AND MEN IS AS FOLLOWS:

In the rank E-1 there are 39 women and 36 men

In the rank E-2 there are 213 women and 127 men

In the rank E-3 there are 3540 women and 2178 men

In the rank E-4 there are 5840 women and 4478 men

In the rank E-5 there are 4683 women and 5625 men

In the rank E-6 there are 602 women and 1886 men

In the rank E-7 there are 74 women and 673 men

In the rank E-8 there are 3 women and 103 men

In the rank E-9 there are 1 women and 49 men

There are 30150 persons who want to be assigned with their spouse, and 0 who did not request join spouse assignment consideration.

In AFSC 10 there are	26	men and	1	women
In AFSC 11 there are	264	men and	9	women
In AFSC 12 there are	72	men and	60	women
In AFSC 20 there are	525	men and	534	women
In AFSC 22 there are	2	men and	0	women
In AFSC 23 there are	106	men and	144	women
In AFSC 24 there are	43	men and	28	women
In AFSC 25 there are	81	men and	95	women
In AFSC 27 there are	547	men and	652	women
In AFSC 29 there are	317	men and	559	women
In AFSC 30 there are	797	men and	505	women
In AFSC 31 there are	109	men and	60	women
In AFSC 32 there are	917	men and	606	women
In AFSC 34 there are	65	men and	47	women
In AFSC 36 there are	140	men and	39	women
In AFSC 39 there are	66	men and	82	women
In AFSC 40 there are	26	men and	19	women

In	AFSC	41	there are	0	men and	0	women
In	AFSC	42	there are	1319	men and	1062	women
In	AFSC	43	there are	1267	men and	378	women
In	AFSC	44	there are	90	men and	56	women
In	AFSC	46	there are	594	men and	156	women
In	AFSC	47	there are	185	men and	58	women
In	AFSC	49	there are	0	men and	0	women
In	AFSC	51	there are	229	men and	259	women
In	AFSC	54	there are	339	men and	141	women
In	AFSC	55	there are	463	men and	217	women
In	AFSC	56	there are	48	men and	35	women
In	AFSC	57	there are	159	men and	54	women
In	AFSC	59	there are	2	men and	0	women
In	AFSC	60	there are	524	men and	523	women
In	AFSC	61	there are	76	men and	109	women
In	AFSC	62	there are	141	men and	212	women
In	AFSC	63	there are	241	men and	58	women
In	AFSC	64	there are	992	men and	1664	women
In	AFSC	65	there are	47	men and	90	women
In	AFSC	66	there are	26	men and	13	women
In	AFSC	67	there are	250	men and	424	women
In	AFSC	69	there are	17	men and	26	women
In	AFSC	70	there are	902	men and	2379	women
In	AFSC	73	there are	469	men and	858	women
In	AFSC	74	there are	58	men and	98	women
In	AFSC	75	there are	136	men and	185	women
In	AFSC	79	there are	34	men and	62	women
In	AFSC	81	there are	1269	men and	409	women
In	AFSC	82	there are	22	men and	2	women
In	AFSC	87	there are	39	men and	38	women
In	AFSC	90	there are	661	men and	1283	women
In	AFSC	91	there are	131	men and	179	women
In	AFSC	92	there are	112	men and	130	women
In	AFSC	98	there are	160	men and	361	women
In	AFSC	99	there are	50	men and	36	women

STATISTICS FROM THE DATA BASE (DB)
FOR THE YEAR 1983
(AFTER THE 'H' RECORDS HAD BEEN DELETED)

There are 15870 males and 15697 females.
There are 5054 males with dependents
There are 3177 females with dependents

THE RANK DISTRIBUTION OF WOMEN AND MEN IS AS FOLLOWS:

In the rank E-1 there are	30	women and	30	men
In the rank E-2 there are	200	women and	119	men
In the rank E-3 there are	3502	women and	2355	men
In the rank E-4 there are	5752	women and	4414	men
In the rank E-5 there are	5127	women and	5709	men
In the rank E-6 there are	907	women and	2202	men
In the rank E-7 there are	113	women and	859	men
In the rank E-8 there are	3	women and	136	men
In the rank E-9 there are	0	women and	46	men

There are 31567 persons who want to be assigned with their spouse, and 0 who did not request join spouse assignment consideration.

In AFSC 10 there are	34	men and	2	women
In AFSC 11 there are	259	men and	13	women
In AFSC 12 there are	74	men and	66	women
In AFSC 20 there are	585	men and	623	women
In AFSC 22 there are	3	men and	0	women
In AFSC 23 there are	94	men and	138	women
In AFSC 24 there are	47	men and	28	women
In AFSC 25 there are	73	men and	94	women
In AFSC 27 there are	562	Men and	662	women
In AFSC 29 there are	341	men and	572	women
In AFSC 30 there are	866	men and	507	women
In AFSC 31 there are	127	men and	58	women
In AFSC 32 there are	984	men and	652	women
In AFSC 34 there are	63	men and	43	women
In AFSC 36 there are	157	men and	44	women
In AFSC 39 there are	88	men and	118	women
In AFSC 40 there are	22	men and	18	women
In AFSC 41 there are	0	men and	0	women

In AFSC 42	there are	1393	men and	1052	women
In AFSC 43	there are	1324	men and	395	women
In AFSC 44	there are	97	men and	51	women
In AFSC 46	there are	648	men and	212	women
In AFSC 47	there are	166	men and	56	women
In AFSC 49	there are	0	men and	0	women
In AFSC 51	there are	251	men and	316	women
In AFSC 54	there are	345	men and	134	women
In AFSC 55	there are	453	men and	229	women
In AFSC 56	there are	54	men and	29	women
In AFSC 57	there are	151	men and	45	women
In AFSC 59	there are	1	men and	0	women
In AFSC 60	there are	537	men and	542	women
In AFSC 61	there are	78	men and	113	women
In AFSC 62	there are	107	men and	184	women
In AFSC 63	there are	260	men and	70	women
In AFSC 64	there are	1024	men and	1689	women
In AFSC 65	there are	54	men and	117	women
In AFSC 66	there are	33	men and	21	women
In AFSC 67	there are	256	men and	449	women
In AFSC 69	there are	14	men and	24	women
In AFSC 70	there are	503	men and	2454	women
In AFSC 73	there are	495	men and	901	women
In AFSC 74	there are	61	men and	85	women
In AFSC 75	there are	146	men and	236	women
In AFSC 79	there are	37	men and	76	women
In AFSC 81	there are	1357	men and	435	women
In AFSC 82	there are	21	men and	2	women
In AFSC 87	there are	36	men and	39	women
In AFSC 90	there are	679	men and	1289	women
In AFSC 91	there are	140	men and	185	women
In AFSC 92	there are	157	men and	202	women
In AFSC 98	there are	147	men and	343	women
In AFSC 99	there are	66	men and	44	women

STATISTICS FROM THE DATA BASE (DB)
FOR THE YEAR 1984
(AFTER THE 'H' RECORDS HAD BEEN DELETED)

There are 15836 males and 15654 females.
There are 5148 males with dependents
There are 3438 females with dependents

THE RANK DISTRIBUTION OF WOMEN AND MEN IS AS FOLLOWS:

In the rank E-1 there are	25	women and	15	men
In the rank E-2 there are	166	women and	101	men
In the rank E-3 there are	2974	women and	1877	men
In the rank E-4 there are	5381	women and	4332	men
In the rank E-5 there are	5567	women and	5708	men
In the rank E-6 there are	1356	women and	2536	men
In the rank E-7 there are	170	women and	1012	men
In the rank E-8 there are	14	women and	193	men
In the rank E-9 there are	1	women and	62	men

There are 31490 persons who want to be assigned with their spouse, and 0 who did not request join spouse assignment consideration.

In AFSC 10 there are	49	men and	2	women
In AFSC 11 there are	291	men and	25	women
In AFSC 12 there are	78	men and	58	women
In AFSC 20 there are	605	men and	653	women
In AFSC 22 there are	3	men and	0	women
In AFSC 23 there are	94	men and	132	women
In AFSC 24 there are	53	men and	37	women
In AFSC 25 there are	81	men and	99	women
In AFSC 27 there are	556	men and	644	women
In AFSC 29 there are	362	men and	572	women
In AFSC 30 there are	824	men and	470	women
In AFSC 31 there are	122	men and	55	women
In AFSC 32 there are	952	men and	630	women
In AFSC 34 there are	67	men and	41	women
In AFSC 36 there are	142	men and	37	women
In AFSC 39 there are	86	men and	140	women
In AFSC 40 there are	29	men and	18	women

In	AFSC	41	there are	0	men and	0	women
In	AFSC	42	there are	1361	men and	1034	women
In	AFSC	43	there are	1309	men and	370	women
In	AFSC	44	there are	89	men and	46	women
In	AFSC	46	there are	650	men and	208	women
In	AFSC	47	there are	159	men and	46	women
In	AFSC	49	there are	0	men and	0	women
In	AFSC	51	there are	262	men and	329	women
In	AFSC	54	there are	324	men and	99	women
In	AFSC	55	there are	410	men and	230	women
In	AFSC	56	there are	54	men and	28	women
In	AFSC	57	there are	132	men and	34	women
In	AFSC	59	there are	8	men and	1	women
In	AFSC	60	there are	528	men and	539	women
In	AFSC	61	there are	78	men and	118	women
In	AFSC	62	there are	109	men and	191	women
In	AFSC	63	there are	256	men and	62	women
In	AFSC	64	there are	1009	men and	1674	women
In	AFSC	65	there are	58	men and	126	women
In	AFSC	66	there are	45	men and	37	women
In	AFSC	67	there are	243	men and	463	women
In	AFSC	69	there are	15	men and	27	women
In	AFSC	70	there are	940	men and	2517	women
In	AFSC	73	there are	503	men and	948	women
In	AFSC	74	there are	71	men and	84	women
In	AFSC	75	there are	147	men and	275	women
In	AFSC	79	there are	36	men and	72	women
In	AFSC	81	there are	1370	men and	411	women
In	AFSC	82	there are	23	men and	3	women
In	AFSC	87	there are	41	men and	42	women
In	AFSC	90	there are	696	men and	1290	women
In	AFSC	91	there are	152	men and	183	women
In	AFSC	92	there are	162	men and	208	women
In	AFSC	98	there are	151	men and	308	women
In	AFSC	99	there are	51	men and	36	women

STATISTICS FROM THE DATA BASE (DB)
FOR THE YEAR 1985
(AFTER THE 'H' RECORDS HAD BEEN DELETED)

There are 16024 males and 15793 females.
There are 5168 males with dependents
There are 3583 females with dependents

THE RANK DISTRIBUTION OF WOMEN AND MEN IS AS FOLLOWS:

In the rank E-1 there are 34 women and 26 men

In the rank E-2 there are 247 women and 124 men

In the rank E-3 there are 2548 women and 1646 men

In the rank E-4 there are 5752 women and 4682 men

In the rank E-5 there are 5533 women and 5564 men

In the rank E-6 there are 1438 women and 2605 men

In the rank E-7 there are 220 women and 1095 men

In the rank E-8 there are 19 women and 206 men

In the rank E-9 there are 2 women and 76 men

There are 31817 persons who want to be assigned with their spouse, and 0 who did not request join spouse assignment consideration.

In AFSC 10 there are	58	men and	5	women
In AFSC 11 there are	305	men and	27	women
In AFSC 12 there are	87	men and	61	women
In AFSC 20 there are	627	men and	680	women
In AFSC 22 there are	3	men and	0	women
In AFSC 23 there are	97	men and	129	women
In AFSC 24 there are	56	men and	42	women
In AFSC 25 there are	85	men and	99	women
In AFSC 27 there are	579	men and	656	women
In AFSC 29 there are	93	men and	143	women
In AFSC 30 there are	822	men and	460	women
In AFSC 31 there are	26	men and	12	women
In AFSC 32 there are	920	men and	584	women
In AFSC 34 there are	65	men and	40	women
In AFSC 36 there are	151	men and	36	women
In AFSC 39 there are	87	men and	156	women
In AFSC 40 there are	29	men and	18	women

In AFSC 41	there are	179	men and	88	women
In AFSC 42	there are	1370	men and	999	women
In AFSC 43	there are	1316	men and	383	women
In AFSC 44	there are	0	men and	0	women
In AFSC 46	there are	654	men and	196	women
In AFSC 47	there are	157	men and	44	women
In AFSC 49	there are	539	men and	785	women
In AFSC 51	there are	0	men and	0	women
In AFSC 54	there are	323	men and	105	women
In AFSC 55	there are	407	men and	226	women
In AFSC 56	there are	56	men and	27	women
In AFSC 57	there are	140	men and	28	women
In AFSC 59	there are	8	men and	2	women
In AFSC 60	there are	549	men and	560	women
In AFSC 61	there are	85	men and	112	women
In AFSC 62	there are	116	men and	202	women
In AFSC 63	there are	247	men and	61	women
In AFSC 64	there are	1022	men and	1676	women
In AFSC 65	there are	69	men and	131	women
In AFSC 66	there are	45	men and	46	women
In AFSC 67	there are	246	men and	457	women
In AFSC 69	there are	15	men and	28	women
In AFSC 70	there are	945	men and	2572	women
In AFSC 73	there are	499	men and	982	women
In AFSC 74	there are	75	men and	89	women
In AFSC 75	there are	159	men and	294	women
In AFSC 79	there are	39	men and	79	women
In AFSC 81	there are	1371	men and	387	women
In AFSC 82	there are	22	men and	5	women
In AFSC 87	there are	40	men and	43	women
In AFSC 90	there are	706	men and	1300	women
In AFSC 91	there are	160	men and	186	women
In AFSC 92	there are	153	men and	205	women
In AFSC 98	there are	157	men and	303	women
In AFSC 99	there are	65	men and	44	women

Appendix D

RAPS OF JOIN SPOUSE MATTERS

1. ARE YOU CURRENTLY MARRIED TO ANOTHER ACTIVE DUTY AIR FORCE MEMBER?

   A. YES

   B. NO: STOP AND TURN IN SURVEY

2. HOW LONG HAVE YOU AND YOUR CURRENT SPOUSE BEEN MARRIED?

   A. LESS THAN 2 YEARS

   B. 2 BUT LESS THAN 4 YEARS

   C. 4 BUT LESS THAN 6 YEARS

   D. 6 BUT LESS THAN 8 YEARS

   E. 8 BUT LESS THAN 10 YEARS

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UNCLAS E F T O FOUO

F. 10 BUT LESS THAN 12 YEARS

G. 12 BUT LESS THAN 20 YEARS

H. MORE THAN 20 YEARS

3. WHAT IS YOUR RANK?

A. COL OR ABOVE
B. LT COL
C. MAJ
D. CAPT
E. 1LT
F. 2LT
G. CMSGT
H. SMSGT
I. MSGT
J. TSGT
K. SSGT
L. SGT
M. SRA
N. A1C
O. AMN
P. AB

4. WHAT IS YOUR SPOUSE'S RANK?

A. COL OR ABOVE
B. LT COL
C. MAJ
D. CAPT
E. 1LT
F. 2LT
G. CMSGT
I. MSGT
J. TSGT (upper case)
K. SSGT
L. SGT
M. SRA
N. A1C
O. AMN

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H. SMSGT P. AB

5. WHAT IS YOUR SEX?

A. MALE

B. FEMALE

6. HOW MUCH TOTAL ACTIVE FEDERAL MILITARY SERVICE (TAFMS) HAVE YOU COMPLETED?

A. LESS THAN 2 YEARS

B. 2 BUT LESS THAN 4 YEARS

C. 4 BUT LESS THAN 6 YEARS

D. 6 BUT LESS THAN 8 YEARS

E. 8 BUT LESS THAN 10 YEARS

F. 10 BUT LESS THAN 12 YEARS

G. 12 BUT LESS THAN 20 YEARS

H. 20 YEARS OR MORE

7. DO YOU CURRENTLY PLAN TO REMAIN IN THE AIR FORCE FOR A TOTAL OF AT LEAST 20 YEARS ACTIVE DUTY?

A. YES

B. UNDECIDED

C. NO

D. N/A, ALREADY SERVED 20 YEARS

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8. WHICH OF THE FOLLOWING BEST DESCRIBES YOUR CURRENT CAREER STATUS?

A. 1ST TERM AIRMAN

B. 2ND TERM AIRMAN

C. CAREER AIRMAN (ON 3RD OR MORE ENLISTMENT)

D. OFFICER ON INITIAL SERVICE COMMITMENT

E. OFFICER BEYOND INITIAL SERVICE COMMITMENT

9. ARE YOU CURRENTLY ASSIGNED TO A MOBILITY POSITION?

A. YES

B. NO

10. WHICH OF THE FOLLOWING TOUR CATEGORIES BEST APPLIES TO YOU?

A. SHORT OVERSEA, ACCOMPANIED

B. SHORT OVERSEA, UNACCOMPANIED

C. LONG OVERSEA, ACCOMPANIED

D. LONG OVERSEA, UNACCOMPANIED

E. CONUS ISOLATED, ACCOMPANIED

F. CONUS ISOLATED, UNACCOMPANIED

G. NORMAL CONUS LOCATION

11. DO YOU HAVE DEPENDENT CHILDREN FOR WHOM YOU ARE RESPONSIBLE?

A. NO

B. YES, LIVING WITH ME AND/OR MY MILITARY SPOUSE

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C. YES, BUT TEMPORARILY LIVING WITH SOMEONE OTHER THAN ME OR MY MILITARY SPOUSE

D. YES, BUT PERMANENTLY LIVING WITH SOMEONE OTHER THAN ME OR MY MILITARY SPOUSE

E. A COMBINATION OF B, C OR D

12. ARE YOU AND YOUR MILITARY SPOUSE ASSIGNED TO THE SAME GEOGRAPHIC AREA WHERE YOU ARE ABLE TO ESTABLISH A COMMON HOUSEHOLD?

A. YES

B. NO

13. ARE YOU AND YOUR MILITARY SPOUSE ASSIGNED TO THE SAME INSTALLATION?

A. YES

B. NO

14. ARE YOU AND YOUR MILITARY SPOUSE ASSGINED TO THE SAME UNIT?

A. YES

B. NO

15. WHAT IS THE FIRST DIGIT OF YOUR AFSC?

A. 0
B. 1
C. 2
F. 5
G. 6
H. 7

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D. 3 I. 8

E. 4 J. 9

16. WHAT IS THE SECOND DIGIT OF YOUR AFSC?

A. 0 F. 5

B. 1 G. 6

C. 2 H. 7

D. 3 I. 8

E. 4 J. 9

17. WHAT IS THE FIRST DIGIT OF YOUR SPOUSE'S AFSC?

A. 0 F. 5

B. 1 G. 6

C. 2 H. 7

D. 3 I. 8

E. 4 J. 9

18. WHAT IS THE SECOND DIGIT OF YOUR SPOUSE'S AFSC?

A. 0 F. 5

B. 1 G. 6

C. 2 H. 7

D. 3 I. 8

E. 4 J. 9

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MILITARY LIFE INVOLVES SOME AMOUNT OF FAMILY SEPARATION WHETHER BOTH MEMBERS ARE MILITARY OR ONE IS CIVILIAN. WITH INCREASING NUMBERS OF WOMEN IN THE NATIONAL WORKFORCE, DUAL CAREER FAMILIES ARE ALSO INCREASING AND FAMILY SEPARATION IS BECOMING LESS UNUSUAL. AIR FORCE JOIN SPOUSE ASSIGNMENT POLICIES ARE INTENDED TO PROVIDE MILITARY COUPLES THE OPPORTUNITY TO LIVE TOGETHER SO LONG AS THERE ARE VALID AIR FORCE REQUIREMENTS FOR BOTH MEMBERS AT THE SAME LOCATION. IT IS IMPORTANT FOR THE AF TO UNDERSTAND HOW YOU FEEL ABOUT POSSIBLE SEPARATION FROM YOUR SPOUSE.

19. HOW LONG DO YOU AND YOUR SPOUSE EXPECT TO BE SEPARATED DURING YOUR CURRENT ASSIGNMENT?

A. N/A
B. LESS THAN 6 MONTHS
C. 6 BUT LESS THAN 12 MONTHS
D. 12 BUT LESS THAN 18 MONTHS
E. 18 BUT LESS THAN 36 MONTHS
F. 36 MONTHS OR MORE
G. DON'T KNOW

20. HOW MANY TIMES SINCE YOU'VE BEEN MARRIED HAVE YOU BEEN ASSIGNED APART FROM YOUR SPOUSE FOR AT LEAST 6 MONTHS? (EXCLUDE INITIAL TECHNICAL TRAINING)

A. NEVER
B. ONCE

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C. TWICE

D. THREE TIMES

E. FOUR TIMES

F. FIVE OR MORE TIMES

21. HOW MANY TIMES SINCE YOU'VE BEEN MARRIED HAVE YOU BEEN ON A TDY THAT EXCEEDED 3 MONTHS? (EXCLUDE INITIAL TECHNICAL TRAINING)

A. NEVER

B. ONCE

C. TWICE

D. THREE TIMES

E. FOUR TIMES

F. FIVE OR MORE TIMES

22. GIVEN THAT YOU MUST BE ASSIGNED AWAY FROM YOUR SPOUSE, WHAT IS THE LONGEST PERIOD OF TIME YOU COULD ACCEPT BEING ASSIGNED AWAY FROM YOUR SPOUSE?

A. MORE THAN 5 YEARS

B. 5 YEARS

C. 4 YEARS

D. 3 YEARS

E. 2 YEARS

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F. 1 1/2 YEARS

G. 1 YEAR

H. LESS THAN 1 YEAR

23. WHAT IS THE TOTAL PERIOD OF TIME (OVER AN ENTIRE CAREER) YOU COULD ACCEPT BEING ASSIGNED AWAY FROM YOUR SPOUSE?

A. 10 YEARS OR MORE

B. 8-9 YEARS

C. 6-7 YEARS

D. 5 YEARS

E. 4 YEARS

F. 3 YEARS

G. 2 YEARS

H. 1 1/2 YEARS

I. 1 YEAR

J. LESS THAN 1 YEAR

24. IF DURING 20 YEARS OF MILITARY SERVICE YOU HAD 7 ASSIGNMENTS, HOW MANY OF THESE ASSIGNMENTS COULD YOU SPEND APART FROM YOUR SPOUSE WITHOUT SERIOUSLY AFFECTING YOUR PERSONAL CAREER INTENTIONS?

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A. N/A, I'VE ALREADY DECIDED TO SEPARATE BEFORE I'M ELIGIBLE TO RETIRE

B. 1

C. 2

D. 3

E. 4

F. 5

G. 6

H. 7

ASSUME YOUR SPOUSE IS IN AN ACCOMPANIED TOUR AREA WHERE DEPENDENTS ARE AUTHORIZED. GIVEN THE POSSIBLE ASSIGNMENT SITUATIONS IN QUESTIONS 25-29, WHAT WOULD YOU DO?

A. I WOULD TAKE THE ASSIGNMENT

B. I WOULD RETIRE, IF ELIGIBLE

C. I WOULD SEPARATE, IF ELIGIBLE, AND SEEK ASSIGNMENT WITH THE AIR NATIONAL GUARD OR AF RESERVE

D. I WOULD SEPARATE, IF ELIGIBLE, AND NOT SEEK ASSIGNMENT WITH THE AIR NATIONAL GUARD OR AF RESERVE

E. DON'T KNOW

25. YOU RECEIVED AN ASSIGNMENT WHEREBY YOU WOULD BE SEPARATED FROM

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YOUR SPOUSE FOR 12 MONTHS OR LESS.

26. YOU RECEIVED AN ASSIGNMENT WHEREBY YOU WOULD BE SEPARATED FROM YOUR SPOUSE FOR 13 TO 18 MONTHS.

27. YOU RECEIVED AN ASSIGNMENT WHEREBY YOU WOULD BE SEPARATED FROM YOUR SPOUSE FOR 19 TO 24 MONTHS.

28. YOU RECEIVED AN ASSIGNMENT WHEREBY YOU WOULD BE SEPARATED FROM YOUR SPOUSE FOR 25 TO 30 MONTHS.

29. YOU RECEIVED AN ASSIGNMENT WHEREBY YOU WOULD BE SEPARATED FROM YOUR SPOUSE FOR 31 TO 36 MONTHS.

30. WHAT WOULD BE YOUR MAIN REASON/CONSIDERATION IN DECIDING TO SEPARATE OR RETIRE RATHER THAN TO ACCEPT AN ASSIGNMENT SEPARATE FROM YOUR SPOUSE?

A. N/A, WOULDN'T SEPARATE/RETIRE

B. DON'T WANT TO BE SEPARATED FROM SPOUSE OR CHILDREN

C. DON'T HAVE ACCEPTABLE ARRANGEMENTS FOR CARE OF CHILDREN

D. HAVE SPECIAL FAMILY CARE SITUATIONS (CHAPS, DEPENDENT DISABLED ADULT, ETC.)

E. WANT TO REMAIN IN A GEOGRAPHIC AREA

F. THE NON-CAREER-ENHANCING NATURE OF THE FUTURE JOB

G. CIVILIAN JOB OPPORTUNITIES

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H. OTHER

BELOW IS A LIST OF POSSIBLE ASSIGNMENT SITUATIONS. WHEN ANSWERING EACH QUESTION, ASSUME YOU AND YOUR SPOUSE ARE NOW ASSIGNED TOGETHER — AND YOU ARE BOTH SELECTED FOR TOURS OF EQUAL LENGTH BUT IN DIFFERENT AREAS WHERE YOU COULD NOT LIVE TOGETHER. IF YOU WERE FACED WITH THE FOLLOWING SITUATIONS, WHAT WOULD YOU DO?

31. IF MY SPOUSE RECEIVED A HIGHLY DESIRABLE JOB, AND I RECEIVED A HIGHLY DESIRABLE JOB, AND BOTH ASSIGNMENTS ARE FOR 2 YRS OR LESS, I WOULD:

A. I WOULD TAKE THE ASSIGNMENT

B. I WOULD RETIRE, IF ELIGIBLE

C. I WOULD SEPARATE, IF ELIGIBLE, AND SEEK ASSIGNMENT WITH THE AIR NATIONAL GUARD OR AF RESERVE

D. I WOULD SEPARATE, IF ELIGIBLE, AND SEEK ASSIGNMENT WITH THE AIR NATIONAL GUARD OR AF RESERVE

E. DON'T KNOW

32. IF MY SPOUSE RECEIVED A HIGHLY DESIRABLE JOB, AND I RECEIVED A LESS THAN DESIRABLE JOB, AND BOTH ASSIGNMENTS ARE FOR 2 YRS OR LESS, I WOULD:

A. I WOULD TAKE THE ASSIGNMENT

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B. I WOULD RETIRE, IF ELIGIBLE

C. I WOULD SEPARATE, IF ELIGIBLE, AND SEEK ASSIGNMENT WITH THE AIR NATIONAL GUARD OR AF RESERVE

D. I would not SEPARATE, IF ELIGIBLE, AND SEEK ASSIGNMENT WITH THE AIR NATIONAL GUARD OR AF RESERVE

E. DON'T KNOW

33. IF MY SPOUSE HAD RECEIVED A LESS THAN DESIRABLE JOB, AND I RECEIVED A HIGHLY DESIRABLE JOB, AND BOTH ASSIGNMENTS ARE FOR 2 YRS OR LESS: ~~I WOULD:~~

A. ~~I WOULD~~ TAKE THE ASSIGNMENT

B. ~~I WOULD~~ RETIRE, IF ELIGIBLE

C. ~~I WOULD~~ SEPARATE, IF ELIGIBLE, AND SEEK ASSIGNMENT WITH THE AIR NATIONAL GUARD OR AF RESERVE

D. ~~I WOULD~~ SEPARATE, IF ELIGIBLE, AND SEEK ASSIGNMENT WITH THE AIR NATIONAL GUARD OR AF RESERVE

E. DON'T KNOW

34. IF MY SPOUSE RECEIVED A LESS THAN DESIRABLE JOB AND I RECEIVED A LESS THAN DESIRABLE JOB AND BOTH ASSIGNMENTS ARE FOR 2 YRS OR LESS: ~~I WOULD:~~

A. I WOULD TAKE THE ASSIGNMENT

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B. I WOULD RETIRE, IF ELIGIBLE

C. I WOULD SEPARATE, IF ELIGIBLE, AND SEEK ASSIGNMENT WITH THE AIR NATIONAL GUARD OR AF RESERVE

D. I WOULD SEPARATE, IF ELIGIBLE, AND SEEK ASSIGNMENT WITH THE AIR NATIONAL GUARD OR AF RESERVE

E. DON'T KNOW

35. IF MY SPOUSE RECEIVED A HIGHLY DESIRABLE JOB, AND I RECEIVED A HIGHLY DESIRABLE job, AND BOTH ASSIGNMENTS ARE FOR 2 OR MORE YEARS, I WOULD:

A. I WOULD TAKE THE ASSIGNMENT

B. I WOULD RETIRE, IF ELIGIBLE

C. I WOULD SEPARATE, IF ELIGIBLE, AND SEEK ASSIGNMENT WITH THE AIR NATIONAL GUARD OR AF RESERVE

D. I WOULD SEPARATE, IF ELIGIBLE, AND SEEK ASSIGNMENT WITH THE AIR NATIONAL GUARD OR AF RESERVE

E. DON'T KNOW

36. IF MY SPOUSE RECEIVED A HIGHLY DESIRABLE JOB, AND I RECEIVED A LESS THAN DESIRABLE JOB AND BOTH ASSIGNMENTS ARE FOR 2 OR MORE YRS, I WOULD:

A. I WOULD TAKE THE ASSIGNMENT

MR HAMILTON/MPCYPS/5680

COL CLARK/MPCY/4765

B. I WOULD RETIRE, IF ELIGIBLE

C. I WOULD SEPARATE, IF ELIGIBLE, AND SEEK ASSIGNMENT WITH THE AIR NATIONAL GUARD OR AF RESERVE

D. I WOULD SEPARATE, IF ELIGIBLE, AND SEEK ASSIGNMENT WITH THE AIR NATIONAL GUARD OR AF RESERVE

E. DON'T KNOW

37. IF MY SPOUSE RECEIVED A LESS THAN DESIRABLE JOB, AND I RECEIVED A HIGHLY DESIRABLE JOB, AND BOTH ASSIGNMENTS ARE FOR 2 OR MORE YRS, I WOULD:

A. I WOULD TAKE THE ASSIGNMENT

B. I WOULD RETIRE, IF ELIGIBLE

C. I WOULD SEPARATE, IF ELIGIBLE, AND SEEK ASSIGNMENT WITH THE AIR NATIONAL GUARD OR AF RESERVE

D. I WOULD SEPARATE, IF ELIGIBLE, AND SEEK ASSIGNMENT WITH THE AIR NATIONAL GUARD OR AF RESERVE

E. DON'T KNOW

38. IF MY SPOUSE RECEIVED A LESS THAN DESIRABLE JOB, AND I RECEIVED A LESS THAN DESIRABLE JOB, AND BOTH ASSIGNMENTS ARE FOR 2 OR MORE YRS, I WOULD:

A. I WOULD TAKE THE ASSIGNMENT

C.

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B. I WOULD RETIRE, IF ELIGIBLE

C. I WOULD SEPARATE, IF ELIGIBLE, AND SEEK ASSIGNMENT WITH THE AIR NATIONAL GUARD OR AF RESERVE

D. I WOULD SEPARATE, IF ELIGIBLE, AND SEEK ASSIGNMENT WITH THE AIR NATIONAL GUARD OR AF RESERVE

E. DON'T KNOW

MR HAMILTON/MPCYPS/5680

COL CLARK/MPCY/4765

```
      program translat
c     This program reads the reduced data set from the rapid
c     access personnel survey (RAPS) on join spouce matters and
c     transforms the data to numeric values so multivariate analysis
c     can be performed.
c
c  INPUT:
c
c  FLD    NC     SC     EC    DESCRIPTION                              RANGE
c   1     1      1      1     Q2-Length of current marriage              A-H
c   2     1      2      2     Q3-Rank                                    A-P
c   3     1      3      3     Q4-Spouse's rank                           A-P
c   4     1      4      4     Q5-Sex                                     A-B
c   5     1      5      5     Q6-TAFMS completed                         A-H
c   6     1      6      6     Q7-Plan to stay 20 yrs or more             A-D
c   7     1      7      7     Q8-Current career status                   A-E
c   8     1      8      8     Q11-Responsible for dependent children     A-E
c   9     1      9      9     Q15-first digit of AFSC                    1-9
c   10    1      10     10    Q16-second digit of AFSC                   1-9
c   11    1      11     11    Q17-first digit of spouces AFSC            1=9
c   12    1      12     12    Q18-second digits of spouces AFSC          1-9
c   13    1      13     13    Q22-longest time acceptable separated      A-H
c   14    1      14     14    Q23-total time in career acceptable away   A-J
c   15    1      15     15    Q24-in 7 asgns, how many acceptable away   A-H
c   16    1      16     16    Q25-Spouse accom tour u got asgn short     A-E
c   17    1      17     17    Q26-Spouse accom tour u got asgn 13-18mos  A-E
c   18    1      18     18    Q27-Spouse accom tour u got asgn 19-24mos  A-E
c   19    1      19     19    Q28-Spouse accom tour u got asgn 25-30mos  A-E
c   20    1      20     20    Q29-Spouse accom tour u got asgn 31-36mos  A-E
c
c  OUTPUT:
c  FLD    NC     SC     EC    DESCRIPTION                              RANGE
c   1     1      1      2     Q2-Length of current marriage              2-20
c   2     1      3      3     Q3-Rank                                    9-1
c   3     1      4      4     Q4-Spouse's rank                           9-1
c   4     1      5      5     Q5-Sex                                     0-1
c   5     1      6      7     Q6-TAFMS completed                         2-30
c   6     1      8      8     Q7-Plan to stay 20 yrs or more             0-2
c   7     1      9      9     Q8-Current career status                   1-3
c   8     1      10     10    Q11-Responsible for dependent children     0-1
c   9     1      11     12    Q22-longest time acceptable separated      65-6
c   10    1      13     15    Q23-total time in career acceptable away   120-6
c   11    1      16     16    Q24-in 7 asgns, how many acceptable away   0-7
c   12    1      17     17    Q25-Spouse accom tour u got asgn short     0-4
c   13    1      18     18    Q26-Spouse accom tour u got asgn 13-18mos  0-4
c   14    1      19     19    Q27-Spouse accom tour u got asgn 19-24mos  0-4
c   15    1      20     20    Q28-Spouse accom tour u got asgn 25-30mos  0-4
c   16    1      21     21    Q29-Spouse accom tour u got asgn 31-36mos  0-4
c
c
```

```
      character num (1033,20)
      integer ndp (1033,21)
      open (9, file = 'rapa2.dat', status = 'old')
      open (10, file = 'ndp.dat', status = 'new')
      i = 1
5     if ( i .gt. 1033) then
         goto 1000
        else
         read (9,110) (num (i,j), j = 1,20)
         if (num(i,1) .eq.'A') then
            ndp(i,1) = 1
           elseif (num(i,1) .eq.'B') then
            ndp(i,1) = 3
           elseif (num(i,1) .eq.'C') then
            ndp(i,1) = 5
           elseif (num(i,1) .eq.'D') then
            ndp(i,1) = 7
           elseif (num(i,1) .eq.'E') then
            ndp(i,1) = 9
           elseif (num(i,1) .eq.'F') then
            ndp(i,1) = 11
           elseif (num(i,1) .eq.'G') then
            ndp(i,1) = 16
           elseif (num(i,1) .eq.'H') then
            ndp(i,1) = 20
         endif
         if (num(i,2) .eq.'G') then
            ndp(i,2) = 9
           elseif (num(i,2) .eq.'H') then
            ndp(i,2) = 8
           elseif (num(i,2) .eq.'I') then
            ndp(i,2) = 7
           elseif (num(i,2) .eq.'J') then
            ndp(i,2) = 6
           elseif (num(i,2) .eq.'K') then
            ndp(i,2) = 5
           elseif (num(i,2) .eq.'L') then
            ndp(i,2) = 4
           elseif (num(i,2) .eq.'M') then
            ndp(i,2) = 4
           elseif (num(i,2) .eq.'N') then
            ndp(i,2) = 3
           elseif (num(i,2) .eq.'O') then
            ndp(i,2) = 2
           elseif (num(i,2) .eq.'P') then
            ndp(i,2) = 1
         endif
         if (num(i,3) .eq.'G') then
            ndp(i,3) = 9
           elseif (num(i,3) .eq.'H') then
            ndp(i,3) = 8
           elseif (num(i,3) .eq.'I') then
            ndp(i,3) = 7
```

```
  elseif (num(i,3) .eq.'J') then
   ndp(i,3) = 6
  elseif (num(i,3) .eq.'K') then
   ndp(i,3) = 5
  elseif (num(i,3) .eq.'L') then
   ndp(i,3) = 4
  elseif (num(i,3) .eq.'M') then
   ndp(i,3) = 4
  elseif (num(i,3) .eq.'N') then
   ndp(i,3) = 3
  elseif (num(i,3) .eq.'O') then
   ndp(i,3) = 3
  elseif (num(i,3) .eq.'P') then
   ndp(i,3) = 1
endif
if (num(i,4) .eq.'A') then
   ndp(i,4) = 0
  elseif (num(i,4) .eq.'B') then
   ndp(i,4) = 1
  elseif (num(i,4) .eq.'M') then
   ndp(i,4) = 0
  elseif (num(i,4) .eq.'F') then
   ndp(i,4) = 1
 endif
if (num(i,5) .eq.'A') then
   ndp(i,5) = 1
  elseif (num(i,5) .eq.'B') then
   ndp(i,5) = 3
  elseif (num(i,5) .eq.'C') then
   ndp(i,5) = 5
  elseif (num(i,5) .eq.'D') then
   ndp(i,5) = 7
  elseif (num(i,5) .eq.'E') then
   ndp(i,5) = 9
  elseif (num(i,5) .eq.'F') then
   ndp(i,5) = 11
  elseif (num(i,5) .eq.'G') then
   ndp(i,5) = 16
  elseif (num(i,5) .eq.'H') then
   ndp(i,5) = 25
endif
if (num(i,6) .eq.'A') then
   ndp(i,6) = 1
  elseif (num(i,6) .eq.'B') then
   ndp(i,6) = 0
  elseif (num(i,6) .eq.'C') then
   ndp(i,6) = 0
  elseif (num(i,6) .eq.'D') then
   ndp(i,6) = 1
 endif
if (num(i,7) .eq.'A') then
   ndp(i,7) = 1
  elseif (num(i,7) .eq.'B') then
```

```
    mdp(i,7) = 2
   elseif (num(i,7) .eq.'C') then
    mdp(i,7) = 3
  endif
 if (num(i,8) .eq.'A') then
    mdp(i,8) = 0
   elseif (num(i,8) .eq.'B') then
    mdp(i,8) = 1
   elseif (num(i,8) .eq.'C') then
    mdp(i,8) = 1
   elseif (num(i,8) .eq.'D') then
    mdp(i,8) = 0
   elseif (num(i,8) .eq.'E') then
    mdp(i,8) = 1
  endif
 if (num(i,13) .eq.'A') then
    mdp(i,9) = 65
   elseif (num(i,13) .eq.'B') then
    mdp(i,9) = 60
   elseif (num(i,13) .eq.'C') then
    mdp(i,9) = 48
   elseif (num(i,13) .eq.'D') then
    mdp(i,9) = 36
   elseif (num(i,13) .eq.'E') then
    mdp(i,9) = 24
   elseif (num(i,13) .eq.'F') then
    mdp(i,9) = 18
   elseif (num(i,13) .eq.'G') then
    mdp(i,9) = 12
   elseif (num(i,13) .eq.'H') then
    mdp(i,9) = 6
 endif
 if (num(i,14) .eq.'A') then
    mdp(i,10) = 120
   elseif (num(i,14) .eq.'B') then
    mdp(i,10) = 108
   elseif (num(i,14) .eq.'C') then
    mdp(i,10) = 84
   elseif (num(i,14) .eq.'D') then
    mdp(i,10) = 60
   elseif (num(i,14) .eq.'E') then
    mdp(i,10) = 48
   elseif (num(i,14) .eq.'F') then
    mdp(i,10) = 36
   elseif (num(i,14) .eq.'G') then
    mdp(i,10) = 24
   elseif (num(i,14) .eq.'H') then
    mdp(i,10) = 18
   elseif (num(i,14) .eq.'I') then
    mdp(i,10) = 12
   elseif (num(i,14) .eq.'J') then
    mdp(i,10) = 6
 endif
```

```
if (num(i,15) .eq.'A') then
   mdp(i,11) = 0
  elseif (num(i,15) .eq.'B') then
   mdp(i,11) = 1
  elseif (num(i,15) .eq.'C') then
   mdp(i,11) = 2
  elseif (num(i,15) .eq.'D') then
   mdp(i,11) = 3
  elseif (num(i,15) .eq.'E') then
   mdp(i,11) = 4
  elseif (num(i,15) .eq.'F') then
   mdp(i,11) = 5
  elseif (num(i,15) .eq.'G') then
   mdp(i,11) = 6
  elseif (num(i,15) .eq.'H') then
   mdp(i,11) = 7
endif
if (num(i,16) .eq.'A') then
   mdp(i,12) = 1
  elseif (num(i,16) .eq.'B') then
   mdp(i,12) = 0
  elseif (num(i,16) .eq.'C') then
   mdp(i,12) = 0
  elseif (num(i,16) .eq.'D') then
   mdp(i,12) = 0
  elseif (num(i,16) .eq.'E') then
   mdp(i,12) = 0
 endif
if (num(i,17) .eq.'A') then
   mdp(i,13) = 1
  elseif (num(i,17) .eq.'B') then
   mdp(i,13) = 0
  elseif (num(i,17) .eq.'C') then
   mdp(i,13) = 0
  elseif (num(i,17) .eq.'D') then
   mdp(i,13) = 0
  elseif (num(i,17) .eq.'E') then
   mdp(i,13) = 0
 endif
if (num(i,18) .eq.'A') then
   mdp(i,14) = 1
  elseif (num(i,18) .eq.'B') then
   mdp(i,14) = 0
  elseif (num(i,18) .eq.'C') then
   mdp(i,14) = 0
  elseif (num(i,18) .eq.'D') then
   mdp(i,14) = 0
  elseif (num(i,18) .eq.'E') then
   mdp(i,14) = 0
 endif
if (num(i,19) .eq.'A') then
   mdp(i,15) = 1
  elseif (num(i,19) .eq.'B') then
```

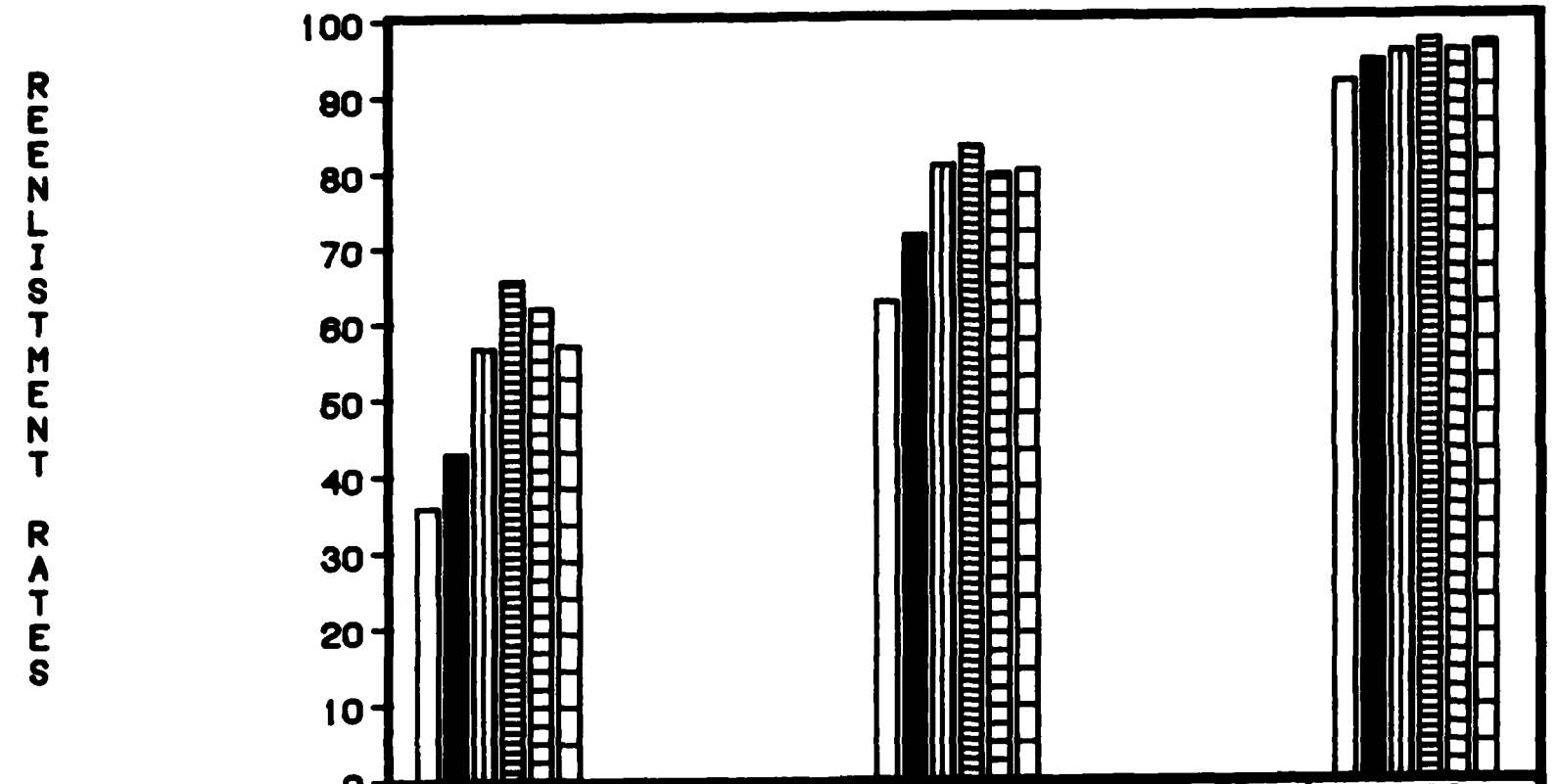
```
            mdp(i,15) = 0
           elseif (num(i,19) .eq.'C') then
            mdp(i,15) = 0
           elseif (num(i,19) .eq.'D') then
            mdp(i,15) = 0
           elseif (num(i,19) .eq.'E') then
            mdp(i,15) = 0
          endif
          if (num(i,20) .eq.'A') then
            mdp(i,16) = 1
           elseif (num(i,20) .eq.'B') then
            mdp(i,16) = 0
           elseif (num(i,20) .eq.'C') then
            mdp(i,16) = 0
           elseif (num(i,20) .eq.'D') then
            mdp(i,16) = 0
           elseif (num(i,20) .eq.'E') then
            mdp(i,16) = 0
          endif
          write (10,120) (mdp(i,j), j = 1,16)
          i = i + 1
          goto 5
        endif
1000    continue
 110    format (20A1)
 120    format (i2,i1,i1,i1,i2,i1,i1,
     + i1,i2,i3,i1,i1,i1,i1,i1,i1)
        stop
        end
```

```
      program thesis
c   This program reads the data from the rapid access personnel
c      survey (RAPS) on join spouce matters and reduces the data to
c      that which is necessary for a multivariate analysis.
c
c   INPUT:
c   FLD    NC     SC     EC    DESCRIPTION                                RANGE
c    1     1      1      1     Q1-Currently married to AD AF member         A-B
c    2     1      2      2     Q2-Length of current marriage                A-H
c    3     1      3      3     Q3-Rank                                      A-P
c    4     1      4      4     Q4-Spouse's rank                             A-P
c    5     1      5      5     Q5-Sex                                       A-B
c    6     1      6      6     Q6-TAFMS completed                           A-H
c    7     1      7      7     Q7-Plan to stay 20 yrs or more               A-D
c    8     1      8      8     Q8-Current career sattus                     A-E
c    9     1      9      9     Q9-Assigned to mobolity position             A-B
c    10    1      10     10    Q10-Tour category best apply to you          A-G
c    11    1      11     11    Q11-Responsibile for dependent children      A-E
c    12    1      12     12    Q12-Asgn to geo area/have common house       A-B
c    13    1      13     13    Q13-Asgn to same installation                A-B
c    14    1      14     14    Q14-Asgn to same unit                        A-B
c    15    2N     15     16    Q15-Q16-first two digits of AFSC             NN
c    16    2N     17     18    Q17-Q18-second two digits of AFSC            NN
c    17    1      19     19    Q19-how long expect seperated this asgn      A-G
c    18    1      20     20    Q20-times asgn apart greater 6 mos           A-F
c    19    1      21     21    Q21-times TDY exceeded 3 mos                 A-F
c    20    1      22     22    Q22-longest time acceptable seperated        A-H
c    21    1      23     23    Q23-totoal time in career acceptable away    A-J
c    22    1      24     24    Q24-in 7 asgns, how many acceptable away     A-H
c    23    1      25     25    Q25-Spouse accom tour u got asgn short       A-E
c    24    1      26     26    Q26-Spouse accom tour u got asgn 13-18mos    A-E
c    25    1      27     27    Q27-Spouse accom tour u got asgn 19-24mos    A-E
c    26    1      28     28    Q28-Spouse accom tour u got asgn 25-30mos    A-E
c    27    1      29     29    Q29-Spouse accom tour u got asgn 31-36mos    A-E
c    28    1      30     30    Q30-reason fo separating instead of asgn     A-H
c    29    1      31     31    Q31-Both got desirable job for <= 2 years    A-E
c    30    1      32     32    Q32-Spouse desirable mine not for <= 2yrs    A-E
c    31    1      33     33    Q33-mine desirable spouse not for <= 2yrs    A-E
c    32    1      34     34    Q34-both undesirable for 2 yrs or more       A-E
c    33    1      35     35    Q35-both desirable for 2 yrs or more         A-E
c    34    1      36     36    Q36-Spouse desirable mine not for >= 2yrs    A-E
c    35    1      37     37    Q37-mine desirable spouse not for >= 2yrs    A-E
c    36    1      38     38    Q38-both undesirable for 2 yrs or more       A-E
c
c   OUTPUT:
c   FLD    NC     SC     EC    DESCRIPTION                                RANGE
c    1     1      1      1     Q2-Length of current marriage                A-H
c    2     1      2      2     Q3-Rank                                      A-P
c    3     1      3      3     Q4-Spouse's rank                             A-P
c    4     1      4      4     Q5-Sex                                       A-B
c    5     1      5      5     Q6-TAFMS completed                           A-H
c    6     1      6      6     Q7-Plan to stay 20 yrs or more               A-D
```

```
c   7    1     7     7    Q8-Current career status                    A-E
c   8    1     8     8    Q11-Responsibile for dependent children     A-E
c   9    2N    9     10   Q15-Q16-first two digits of AFSC            NN
c   10   2N    11    12   Q17-Q18-second two digits of AFSC           NN
c   11   1     13    13   Q22-longest time acceptable seperated       A-H
c   12   1     14    14   Q23-totoal time in career acceptable away   A-J
c   13   1     15    15   Q24-in 7 asgns, how many acceptable away    A-H
c   14   1     16    16   Q25-Spouse accom tour u got asgn short      A-E
c   15   1     17    17   Q26-Spouse accom tour u got asgn 13-18mos   A-E
c   16   1     18    18   Q27-Spouse accom tour u got asgn 19-24mos   A-E
c   17   1     19    19   Q28-Spouse accom tour u got asgn 25-30mos   A-E
c   18   1     20    20   Q29-Spouse accom tour u got asgn 31-36mos   A-E
c
c     Variables:
c        nm = the number of individuals that are not married
c        o  = the number of individuals that are officers
c        os = th number of individuals that are married to officers
c
      integer o, os
      dimension num (1740,38)
      open (9, file = 'raps.dat', status = 'old')
      open (10, file = 'raps2.dat', status = 'new')
      open (11, file = 'raps.out', status = 'new')
      i = 1
      o = 0
      nm = 0
      os = 0
 5    if ( i .gt. 1739) then
         goto 1000
       else
         read (9,100) num (i,1),num(i,2),num(i,3),
     +   num(i,4),num(i,5),num(i,6),
     +   num(i,7),num(i,8),num(i,9),num(i,10),num(i,11),num(i,12),
     +   num(i,13),num(i,14),num(i,15),num(i,16),num(i,17),num(i,18),
     +   num(i,19),num(i,20),num(i,21),num(i,22),num(i,23),num(i,24),
     +   num(i,25),num(i,26),num(i,27),num(i,28),num(i,29),num(i,30),
     +   num(i,31),num(i,32),num(i,33),num(i,34),num(i,35),num(i,36)
         if (num(i,1) .eq. 'B') then
            goto 500
         endif
         if (num(i,3) .gt. 'G') then
            goto 600
         endif
         if (num(i,4) .gt. 'G') then
            goto 700
         endif
         write (10,110) num(i,2),num(i,3),num(i,4),num(i,5),
     +   num(i,6),num(i,7),num(i,8),num(i,11),num(i,15),num(i,16),
     +   num(i,17),num(i,18),num(i,22),num(i,23),num(i,24),num(i,25),
     +   num(i,26),num(i,27),num(i,28),num(i,29)
         i = i + 1
       endif
       goto 5
```

```
  500  nm = nm + 1
       i = i + 1
       goto 5
  600  o = o + 1
       i = i + 1
       goto 5
  700  os = os + 1
       i = i + 1
       goto 5
 1000  continue
       j = 1739 - nm - o - os
       write (11,120) nm,o,os,j
  100  format(14A1,4I1,20A1)
  110  format (8A1,4I1,8A1)
  120  format (1x,'SUMMARY OF RECORDS FROM RAPS DATA',/,'There were',
      +I3,'individuals who were not married to another Air Force member',
      +/,'There were ',I3,'who were officers.',/,'There were',I3,'who',
      +,' were married to officers.',/,'This leaves',I3,
      +'enlisted married couples.')
       stop
       end
```

AIR FORCE REENLISTMENT RATES

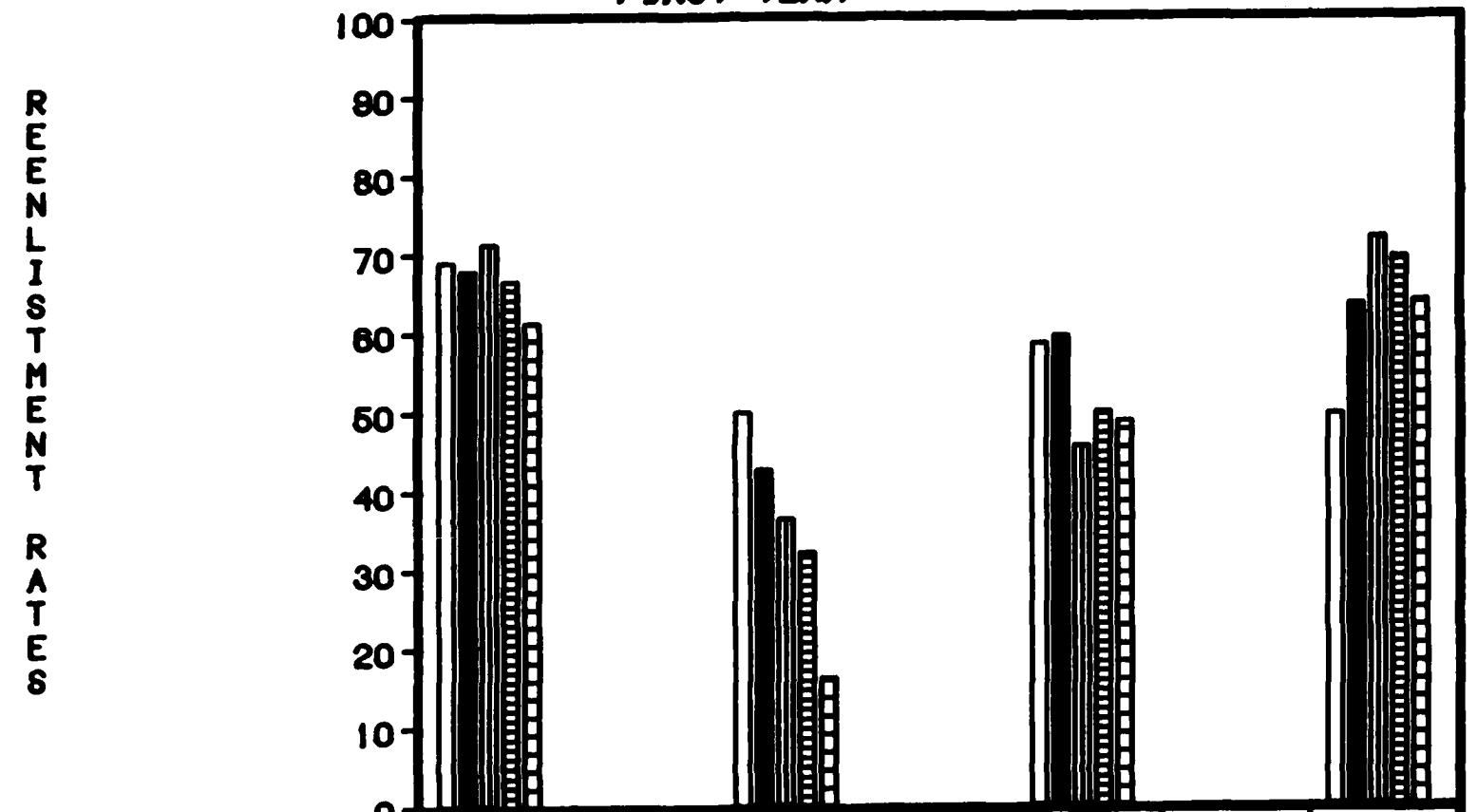


CAT OF ENL	FIRST TERM	SECOND TERM	CAREER
FY 80	35.8	62.7	91.6
FY 81	42.9	71.5	94.3
FY 82	56.7	80.8	95.6
FY 83	65.6	83.3	97
FY 84*	61.9	79.6	95.6
FY 85/2*	57	80.1	96.7

* FY 84 & 85/2 REENL RATES FROM P080 REPORT

OPR: HQ[illegible]

SPOUSE STATUS
FIRST TERM



SPOUSE STATUS	AF ENL	AF OFFICER	OTHER MIL	CIVILIAN
FY 81	69	50	58.5	49.7
FY 82	67.8	42.8	59.5	63.5
FY 83	71.3	36.5	45.7	72
FY 84	66.6	32.2	50	69.5
FY 85/2	61.3	16.2	48.8	63.9

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AD-A167 125 AN INVESTIGATION OF THE EFFECTS OF RANK AFSC AND DEPENDENTS ON THE LENGTH.. (U) AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OH M R HARRINGTON DEC 85 3/3

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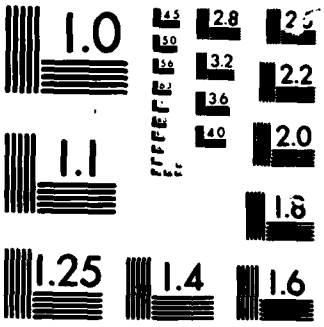
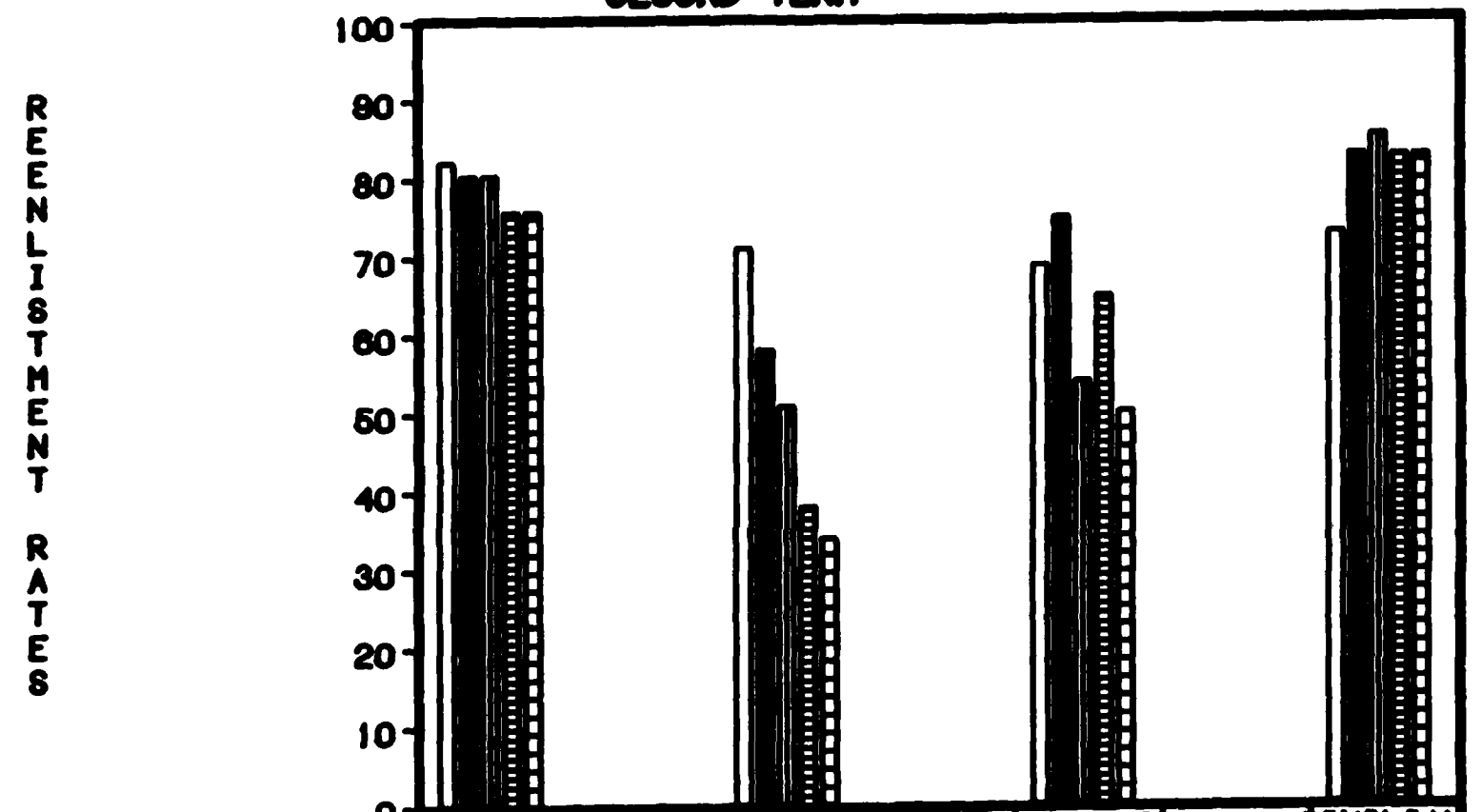


MICROCOPY CHART

SPOUSE STATUS

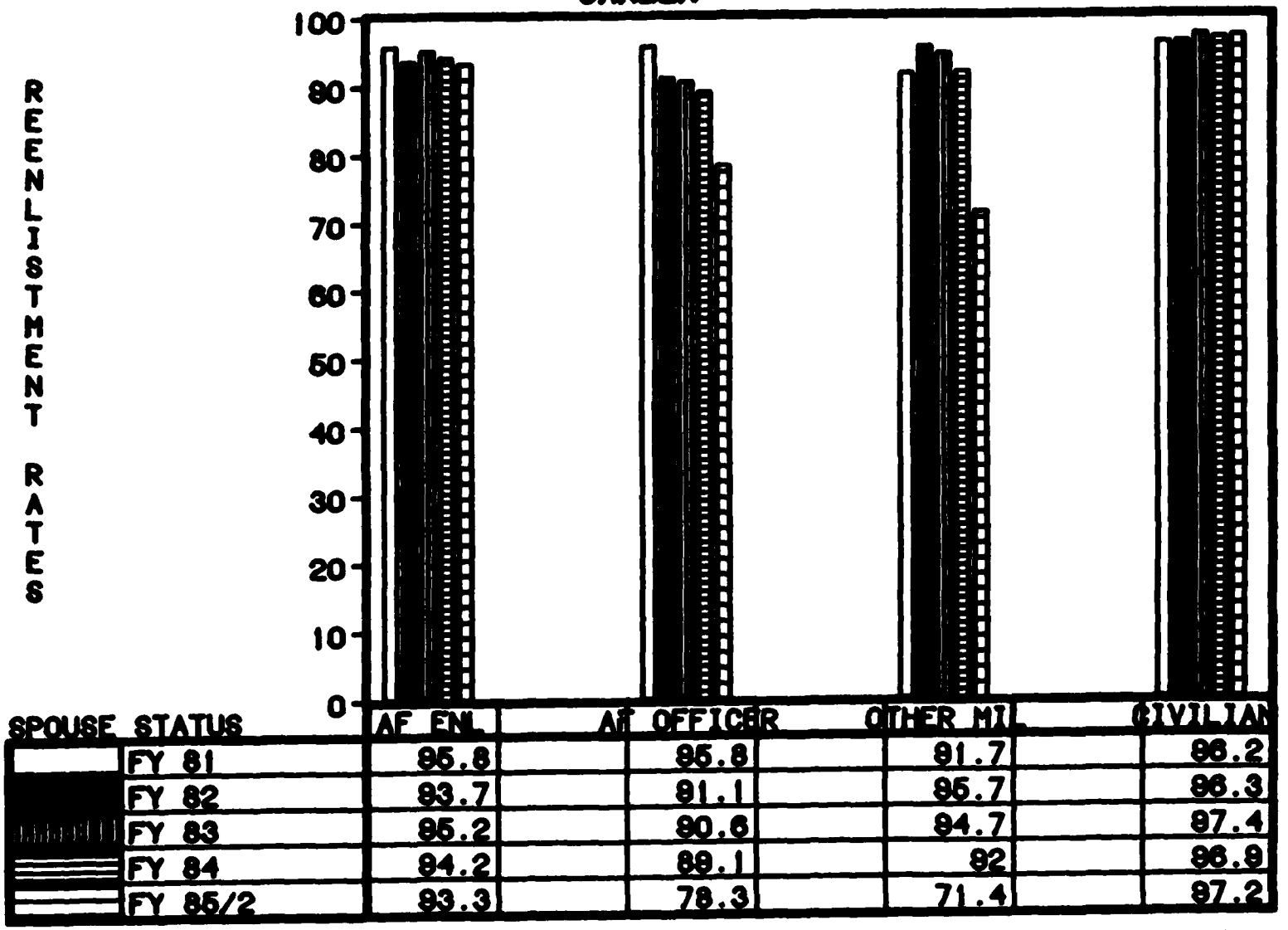
SECOND TERM



SPOUSE STATUS	AF ENL	AF OFFICER	OTHER MIL	CIVILIAN
FY 81	82.1	71	68.8	72.9
FY 82	80.5	58.1	75	82.8
FY 83	80.4	50.9	53.9	85.2
FY 84	75.8	38	64.9	82.6
FY 85/2	75.8	33.9	50	82.8

SPOUSE STATUS

CAREER



SPOUSE STATUS	AF ENL	AF OFFICER	OTHER MIL	CIVILIAN
FY 81	95.8	95.8	91.7	96.2
FY 82	93.7	91.1	95.7	96.3
FY 83	95.2	90.6	94.7	97.4
FY 84	94.2	89.1	92	96.9
FY 85/2	93.3	78.3	71.4	97.2

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Vita

Captain Maureen Harrington was born on 8 July 1948 in Roswell, New Mexico. She graduated from Rose Hawthorne Central Catholic High School, Concord, Massachusetts in 1966. In 1971 she received her Bachelor of Arts degree in Mathematics from St Mary's University, San Antonio, Texas. She taught high school mathematics prior to entering Officer's Training School where she received her commission as a Second Lieutenant in the United States Air Force in August 1979. She was initially assigned to the Air Force Electronic Warfare Center, Kelly AFB, Texas as Chief, Ground Radar Section. She was then reassigned to HQ, Electronic Security Command, also at Kelly AFB, where she served as a Data Scientific Analyst. In 1982 she was assigned to the Foreign Technology Division (AFSC), Wright-Patterson AFB, Ohio as an Infrared Developmental Analyst until her entry into the School of Engineering, Air Force Institute of Technology in June 1984.

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